

PTO 2007-3659

CY=JP
DATE=20070424
KIND=AN
PN=12336024

COSMETIC COMPOSITION WITH MOISTURE-RETAINING PLANT EXTRACTS
[HOSHITSUSEI SHOKUBUTSU CHUUSHUTSUBUTSU WO GANYUU-SURU KESHOURYOU
SOSEIBUTSU]

ICHIMARU PHARCOS CO., LTD.

UNITED STATES PATENT AND TRADEMARK OFFICE
Washington, D.C. April 2007

Translated by: Linguistic Systems, Inc.

PUBLICATION COUNTRY	(10): JP
DOCUMENT NUMBER	(11): 12-336024
DOCUMENT KIND	(12): AN
PUBLICATION DATE	(43): 20001205
APPLICATION NUMBER	(21): HEI11-147425
APPLICATION DATE	(22): 19990527
INTERNATIONAL CLASSIFICATION	(51): 7 A61/K 7/48 7/00
PRIORITY COUNTRY	(33): NA
PRIORITY NUMBER	(31): NA
PRIORITY DATE	(32): NA
INVENTOR	(72): MASAKO TSUCHIZAKI MITSUKO KONDO MUNENORI MAEDA
APPLICANT LTD.	(71): ICHIMARU PHARCOS CO.,
TITLE WITH MOISTURE-RETAINING PLANT	(54): COSMETIC COMPOSITION EXTRACTS
FOREIGN TITLE SHOKUBUTSU CHUUSHUTSUBUTSU WO SOSEIBUTSU]	[54A]: HOSHITSUSEI GANYUU-SURU KESHOURYOU

(19) Japan Patent Office (JP)	(11) Patent Application Publication No.:
(12) Unexamined Patent Application Publication (A)	Hei11-147425
	(43) Published: December 5, 2000

(61) Int. Cl.: 7	Identification code		Theme code		
A61K 7/48 7/00		A61K 7/48 7/00	4C083 K	Request for examination:	Not yet requested
				No. of claims:	13 OL
					(Total 20 pages)

(54) Name of invention:	Cosmetic Composition with Moisture-Retaining Plant Extracts	
	(21) Japanese patent application no.:	Hei11-147425
	(22) Application filed:	May 27, 1999

(71) Patent applicant:	000119472 Ichimaru Pharcos Co., Ltd.	318-1, Asagi, Shinsei-cho, Motosu-gun, Gifu-ken, Japan
(72) Inventor:	Masako Tsuchizaki	24, Shimo'okuwa-cho, Gifu-shi, Gifu- ken, Japan
(72) Inventor:	Mitsuko Kondo	207, Nagara-Obusa, Gifu-shi, Gifu-ken, Japan
(72) Inventor:	Munenori Maeda	2A, Pharcos House, 105-1, 4-chome, Kuroko-Minami, Gifu-shi, Gifu-ken, Japan

To be continued on the last page.

DETAILED STATEMENT

(54) NAME OF INVENTION

Cosmetic Composition with Moisture-Retaining Plant Extracts

(57) ABSTRACT

Problem to be Solved: This invention is designed with the purpose of producing cosmetics, bath agents, and cleansers that contain moisture-retaining plant extracts with sustained moisture-retention effects over extended periods, and possess properties effective for skin treatments that prevent, alleviate, or improve such conditions as dryness, rough skin, cracks, chaps, dandruff, pruritus and inflammatory diseases, and for hair treatments that relieve such conditions as dryness, dehydration, split ends, brittle hair, and loss of natural gloss.

Solution to the Problem: One or more than two type(s) of plant extracts from uña de gato (Uncaria tomentosa (Willd.) DC), hercampuri (Gentiana prostrata L.), quinua (Chenopodium quinoa Willd.), sangre de grado (Croton palanostigma), cedrón (Lippia triphylla), chanca piedra (Phyllanthus niruri L.), pájaro bobo (Tessaria integrifolia R. et P.),

balsamina (*Momordica charantia* L.), boldo (*Peumus boldus* Molina), matico (*Piper elongatum* Vahl. Enum.), manzanilla (*Matricaria recutita*), and muña (*Minthostachys setosa* Brig.) is/are selected and used as the constituents for cosmetics, bath agents, and cleansers.

SCOPE OF PATENT CLAIMS

Claim 1: This invention is designed with the purpose of producing a cosmetic composition that contains one or more than two type(s) of selected plant extracts from uña de gato (*Uncaria tomentosa* (Willd.) DC), hercámpuri (*Gentiana prostrata* L.), quinoa (*Chenopodium quinoa* Willd.), sangre de grado (*Croton palanostigma*), cedrón (*Lippia triphylla*), chanca piedra (*Phyllanthus niruri* L.), pájaro bobo (*Tessaria integrifolia* R. et P.), balsamina (*Momordica charantia* L.), boldo (*Peumus boldus* Molina), matico (*Piper elongatum* Vahl. Enum.), manzanilla (*Matricaria recutita*), and muña (*Minthostachys setosa* Brig.).

Claim 2: This invention is designed with the purpose of producing a bath-agent composition that contains one or more than two type(s) of selected plant extracts from uña de gato (*Uncaria tomentosa* (Willd.) DC), hercámpuri (*Gentiana prostrata* L.), quinoa (*Chenopodium quinoa* Willd.), sangre de grado (*Croton palanostigma*), cedrón (*Lippia triphylla*), chanca piedra (*Phyllanthus niruri* L.), pájaro bobo (*Tessaria integrifolia* R. et P.), balsamina (*Momordica charantia* L.), boldo (*Peumus boldus* Molina), matico (*Piper elongatum* Vahl. Enum.), manzanilla (*Matricaria recutita*), and muña (*Minthostachys setosa* Brig.).

Claim 3: This invention is designed with the purpose of producing a cleanser composition that contains one or more than two type(s) of selected plant extracts from uña de gato (*Uncaria tomentosa* (Willd.) DC), hercámpuri (*Gentiana prostrata* L.), quinoa (*Chenopodium quinoa* Willd.), sangre de grado (*Croton palanostigma*), cedrón (*Lippia triphylla*), chanca piedra (*Phyllanthus niruri* L.), pájaro bobo (*Tessaria integrifolia* R. et P.), balsamina (*Momordica charantia* L.), boldo (*Peumus boldus* Molina), matico (*Piper elongatum* Vahl. Enum.), manzanilla (*Matricaria recutita*), and muña (*Minthostachys setosa* Brig.).

DETAILED ACCOUNT ON THE INVENTION

[0001] Technical Category of the Invention: This invention is related to the composition of bath agents and cleansers used as cosmetics or miscellaneous daily goods, and is related to cosmetics, bath agents, and cleansers that contain moisture-retaining plant extracts with sustained moisture-retention effects over extended periods, and possess properties effective for skin treatments that prevent, alleviate, or improve such conditions as dryness, rough skin, cracks, chaps, dandruff, pruritus and inflammatory diseases, and for hair treatments that relieve such conditions as dryness, dehydration, split ends, brittle hair, and loss of natural gloss.

[0002] Prior Art Technologies: Human skin and hair in their healthy state are able to retain a proper amount of moisture without the need for particular additional care. However, alterations and impairments are frequently induced by various environmental factors (including temperature changes, humidity changes, radiation, exposure to water, etc.), contact with detergents, or aging. Specifically, skin and hair that have a reduced moisture-retention capacity tend to become dry,

hardened, lacking in gloss and elasticity, and strained. In recent years, it has been reported that this type of skin dryness is correlated with incidence of atopic dermatitis, with further implications for many other skin conditions. In the case of hair, problems such as dryness, dehydration, split ends, brittle hair, and loss of natural gloss may occur. It has been suggested that if these problems are allowed to progress, more noxious conditions including dark spots, wrinkles and hair loss may result.

[0003] Conventionally, substances such as glycerol, propylene glycol, 1,3-butylene glycol, other polyhydric alcohols, fats and oils, amino acids, proteins, polysaccharides, mucopolysaccharides are used in external applications of cosmetics, etc. for preventing dryness of skin and hair.

[0004] These substances are selected on the basis that they constitute a chemical composition resembling that of natural moisturizing factor (NMF) found in the corneal layer of the epidermis, and function by forming a membrane to check water evaporation when applied to skin or hair.

[0005] Problem to be Solved: However, conventional moisture-retaining compositions are not entirely satisfactory in terms of texture, sustainability of moisture-retention effect, safety, and physicochemical stability. In particular, the duration of effect of conventional moisture-retaining compositions is only 1 hour, which is barely sufficient for prevention or improvement of rough skin or split ends, for maintenance of healthy skin or hair, or for rejuvenation of damaged tissues.

[0006] This invention is designed to solve the aforementioned specific problem, with the purpose of producing the followings: composition of cosmetics and bath agents that contain moisture-retaining plant extracts with sustained moisture-retention effects over extended periods, and possess properties effective for skin treatments that prevent, alleviate, or improve such conditions as dryness, rough skin, cracks, chaps, dandruff, pruritus and inflammatory diseases, and for hair treatments that relieve such conditions as dryness, dehydration, split ends, brittle hair, and loss of natural gloss; improved composition of cleansers that has low risks of causing such problems as rough skin, cracks, chaps, etc.

[0007] Solution to the Problem: The plants used in this invention are described as follows, wherein the preparation is performed with the leaf, stem, root, flower, seed or whole plant, which may also come in the form of crude drugs.

[0008]

- (1) Uña de gato (*Uncaria tomentosa* (Willd.) DC, = *U. gianensis*, Rubiaceae family); variant names: paotati-mōsha, uncaria, cat's claw.
- (2) Hircampuri (*Gentiana prostrata* L., Gentianaceae family); variant names: hilcampure, chavin tea.
- (3) Quinoa (*Chenopodium quinoa* Willd., Chenopodiaceae family); variant name: quinoa
- (4) Sangre de grado (*Croton palanostigma*, = *C. lechleri*, *C. draconoides*, Euphorbiaceae family); variant names: croton

- (5) Cedrón (*Lippia triphylla*; *L. citriodora* H.B.K., Verbenaceae family); variant names: vilcabamba, vervain, lemon verbena.
- (6) Chanca piedra (*Phyllanthus niruri* L., = *P. lathyroides* sensu Muell. Arg., Euphorbiaceae family); variant names: stone-breaker, *Phyllanthus amarus*
- (7) Pájaro bobo (*Tessaria integrifolia* R. et P., Asteraceae family); variant name: river alder.
- (8) Balsamina (*Momordica charantia* L., Cucurbitaceae family); variant names: momordica, bitter melon, balsam pear.
- (9) Boldo (*Peumus boldus* Molina, Monimiaceae family; = *Coleus barbatus* (Andrews) Benth., Labiatae family; = *Vernonia condensata* Baker, Asteraceae family); variant name: boldus.
- (10) Matico (*Piper elongatum* Vahl. Enum.; = *P. aduncum* L.; = *P. angustifolium* Ruiz et Pavon, Piperaceae family); variant names: cordoncillo, piper.
- (11) Manzanilla (*Matricaria recutita*, Asteraceae family); variant name: German chamomile.
- (12) Muña (*Minthostachys setosa* Brig., Labiatae family); variant names: arash muña, muña muña.

[0009] The active ingredients from these plants are extracted using suitable solvents, which may be prepared as discrete solutions of water, ethanol, 1,3-butylene glycol, propylene glycol, glycerol, or polyethylene glycol, or a mixture of the aforementioned reagents. Normally, extraction is done by steeping the plants in the solvents at approximately room temperature for 1-7 day(s), followed by filtration. The resultant extracts may then be diluted, concentrated or lyophilized as desired.

[0010] In order to achieve good yields of moisture-retaining plant extracts, typically, to one part of plant weight, an equivalent of 3-20 parts (or preferably 5-10 parts) of solvent [volume] is added. Although a higher incubation temperature may be used to increase the efficiency of extraction, the temperature should ideally be kept around room temperature for an incubation period of 3-7 days so as to obtain high-quality extraction products with minimal degradation.

[0011] Extracts from the plants used in this invention can all be efficiently obtained using the described method. Hence, extraction may be done with a discrete plant, or with a combination of different plants. The extraction products or extract fluids may be combined for use. In addition, it is known that the use of combined multiple plant extracts can increase the sustainability of moisture-retention effect and improve the efficacy of treatments for rough skin, dandruff and pruritus. It therefore makes practical sense to combine more than two types of plant extracts for applications.

[0012] In addition to the necessary moisture-retaining plant extracts described in this invention, the components of cosmetics, bath agents, and cleansers that constitute this invention are produced with the following cosmetic substances which include commonly used bases and excipients.

[0013] (1) Fats and oils: avocado oil, almond oil, fennel oil, perilla oil, olive oil, orange oil, orange peel oil, benne oil, cacao oil, chamomile oil, carrot oil, cucumber oil, tallow acid, aleurites moluccana seed oil, safflower oil, shea butter, soybean oil, camellia

oil, corn oil, canola oil, peach kernel oil, castor oil, cotton seed oil, arachis oil, turtle oil, mink oil, egg yolk oil, palm oil, palm kernel oil, Rhus succedanea fruit wax, coconut oil, beef tallow, lard, and hydrogenated derivatives (hardened oils) of these fats and oils.

[0014] (2) Waxes: bees wax, carnauba wax, whale wax, lanolin, liquid lanolin, reduced lanolin, hard lanolin, candelilla wax, montan wax, shellac wax, rice bran wax, squalene, squalane, pristine, etc.

[0015] (3) Mineral oils: adepsine oil, vaseline, paraffin, ozokerite, ceresin, microcrystalline wax, etc.

[0016] (4) Fatty acids: naturally-occurring fatty acids including lauric acid, myristic acid, palmitic acid, stearic acid, behenic acid, oleic acid, 12-hydroxy stearic acid, undecylenic acid, tall oil, lanolin acid, etc., and synthetic fatty acids including isononanoic acid, caproic acid, 2-ethylbutanoic acid, isopentanoic acid, 2-methylpentanoic acid, 2-ethylhexanoic acid, etc.

[0017] (5) Alcohols: naturally-occurring alcohols including ethanol, isopropanol, lauryl alcohol, cetanol, stearyl alcohol, oleyl alcohol, lanolin alcohol, cholesterol, phytosterol, etc., and synthetic alcohols including 2-hexyldecanol, isostearyl alcohol, 2-octyl decanol, etc.

[0018] (6) Polyhydric alcohols: ethylene oxide, ethylene glycol, diethylene glycol, triethylene glycol, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, diethylene glycol monomethyl ether, polyethylene glycol, propylene oxide, propylene glycol, polypropylene glycol, 1,3-butylene glycol, glycerin, pentaerythritol, sorbitol, mannitol, etc.

[0019] (7) Esters: isopropyl myristate, isopropyl palmitate, butyl stearate, hexyl laurate, myristyl myristate, oleyl oleate, decyl oleate, octyldodecyl oleate, hexyldecyl dimethyloctanoate, cetyl lactate, myristyl lactate, diethyl phthalate, dibutyl phthalate, lanolin acetate, ethylene glycol monostearate, propylene glycol monostearate, propylene glycol dioleate, etc.

[0020] (8) Metallic soaps: aluminum stearate, magnesium stearate, zinc stearate, calcium stearate, zinc palmitate, magnesium myristate, zinc laurate, zinc undecylenate, etc.

[0021] (9) Gum substances, saccharides, and soluble polymers: acacia gum, benzoin gum, dammar gum, guaiac resin, Iceland moss extract, karaya gum, gum tragacanth, carob gum, quince seed extract, agar, casein, lactose, fructose, sucrose and its esters, trehalose and its derivatives, dextrin, gelatin, pectin, starch, carrageenan resin, carboxymethyl chitins, carboxymethyl chitosans, hydroxyalkyl (C2-C4) chitins containing C2-C4 alkylene oxides (such as ethylene oxide), hydroxyalkyl (C2-C4) chitosans containing C2-C4 alkylene oxides (such as ethylene oxide), low-molecular-weight chitins, low-molecular-weight chitosans, chitosan salts, chitin sulfate, chitosan sulfate, chitin phosphate, chitosan phosphate, alginic acid and its salts, hyaluronic acid and its salts, chondroitin sulfuric acid and its salts, heparin, ethyl cellulose, carboxymethyl cellulose, carboxyethyl cellulose, sodium carboxyethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, nitrocellulose, crystalline cellulose, polyvinyl alcohol,

polyvinyl methyl ether, polyvinylpyrrolidone, polyvinyl methacrylate, polyacrylates, polyalkylene oxides (such as polyethylene oxide, polypropylene oxide, etc.) and their crosslinked polymers, carboxyvinyl polymers, polyethyleneimine, etc.

[0022] (10) Surfactants: anionic surfactants (alkyl carboxylates, alkyl sulfonates, alkyl sulfates, alkyl phosphate ester salts), cationic surfactants (alkylamine salts, alkyl quaternary ammonium salts), ampholytic surfactants including carboxylic-acid-type ampholytic surfactants (amino-type surfactants, betaine-type surfactants), sulfate-ester-type ampholytic surfactants, sulfonate-type ampholytic surfactants, and phosphate-ester-type ampholytic surfactants, nonionic surfactants (ether-type nonionic surfactants, ether-ester-type nonionic surfactants, ester-type nonionic surfactants, nonionic block polymer surfactants, nonionic nitrogen-containing surfactants), other surfactants (natural surfactants, protein hydrolysates and their derivatives, polymeric surfactants, titanium-/silicon-containing surfactants, surfactants containing fluorocarbons), etc.

[0023] (11) Vitamins: vitamin A group (retinol, retinal [vitamin A1], dehydretinal [vitamin A2], carotene, lycopene [provitamin A]), vitamin B group (thiamine chloride, thiamine sulfate [vitamin B1], riboflavin [vitamin B2], pyridoxine [vitamin B6], cyanocobalamin [vitamin B12]), folic acid-related substances, nicotinic-related substances, pantothenic acid-related substances, biotin-related substances, choline, inositol-related substances, vitamin C group (ascorbic acid and its derivatives), vitamin D group (ergocalciferol [vitamin D2], cholecalciferol [vitamin D3], dihydrotachysterol), vitamin E group (vitamin E and its derivatives), ubiquinone-related substances, vitamin K group (phytonadione [vitamin K1], menaquinone [vitamin K2], menadiol [vitamin K3], menadiol [vitamin K4]), other essential fatty acids (vitamin F), carnitine, ferulic acid, γ -oryzanol, oitic acid, vitamin P-related substances (rutin, lemon polyphenol, hesperidin), vitamin U, etc.

[0024] (12) Amino acids: valine, leucine, isoleucine, threonine, methionine, phenylalanine, tryptophan, lysine, glycine, alanine, asparagine, glutamine, serine, cysteine, cystine, tyrosine, hydroxyproline, asparagic acid, glutamic acid, hydroxyllysine, arginine, ornithine, etc.; the sulfates, phosphates, nitrates, citrates, amino acid derivatives such as pyrrolidone carboxylic acid, etc.

[0025] (13) Additives derived from plant and animal sources: According to the type and state of the target products that require additives, these are prepared using common procedures (for example, grinding, milling, cleaning, hydrolysis, fermentation, purification, squeezing, extraction, fractionation, filtration, drying, powderization, granulation, sterilization, pH adjustment, deodorization, decolorization, etc. which can proceed individually or in combination) and may be derived from different materials deemed appropriate for the purposes that they serve.

[0026] In addition, the solvents used for extraction may be selected according to the purpose of application, type, or downstream processing of the target products. In general, it is sufficient to use water or organic aqueous solutions (for example, ethanol, propylene glycol, 1,3-butylene glycol, etc.) alone, or a mixture of more than two pure

solvents. However, in cases where organic solvents serve the processing purposes less well, water alone, ethanol (which can be easily removed after extraction), or water mixed with other solvents may be used. Alternatively, these can also be used for the pressurized solvent extraction method.

[0027] Furthermore, it is expected that additives derived from plant and animal sources, as used in the production of agents for external application, cosmetics, etc. for the whole body or local parts, will have positive effects on the followings: cosmetics effect such as protection of the skin and hair, moisture retention, improvement of touch and aesthetic qualities, emolliation, relief of irritation, stress relief by the use of fragrance, activation of cells (protection against cellular senescence), inhibition of inflammation, improvement of skin and hair textures, prevention and improvement of rough skin, hair growth, hair restoration, prevention of hair loss, enrichment of hair gloss, cleaning effect, relief of fatigue, blood circulation, warm-bath effect, as well as addition of fragrance, deodorization, bodying-up, preservation, buffering, etc.

[0028] Specifically, the plants (crude drugs) cited hereinafter may be used as raw materials: *Prunus amygdalus* (almond; *bian tao*), *Polygonum tinctorium* (*liao lan*), *Sabiaceae* (*qing feng teng*), slender Dutchman's pipe root (*qing mu xiang*), *Firmiana simplex* (*wu tong*), *Radix Cocculi trilobi* (Japanese Snailseed root; *mu fang ji*), *Acacia* (*jin he huan*), *Astilbe chinensis* (*hong sheng ma*), *Ribes rubrum* (redcurrant fruit; *hong sui cu li*), *Vitis vinifera* (red grape), *Haematoxylon campechianum* L. (logwood), *Mallotus japonicus* *Muelleri* (*Agroviensis* (mallotus bark; *ye wu tong*), *Rubia akane* (*hong teng cao*), *Radix Rehmanniae* (*di huang*), *Ferula assa-foetida* (*a wei*), *Ulmus parvifolia* (*lang yu pi*), *Mauritia flexuosa* (palm (Aguaje), *Akebia quinata* (*wu tong*), *Fructus Cannabis* (*ma zi ren*), *Pharbitis nil* (*qian niu zi*), *Hydrangea macrophylla* (*zi yang hua*), *Angelica keiskei* *Koidzumi* (*ming ri ye*), *Phaseolus angularis* (*chi xiao dou*), *Malpighia glabra* (*Acerola*), *Ramulus Uncariae cum Uncis* (*gambir; gou teng*), *Canna edulis* Ker-Gawl, *Pimpinella anisum* (anise seed; *dahuixiangzi*), *Persea Americana* (avocado), *Linum seed*, *Hydrangea serrata* (sweet hydrangea leaf), *Gynostemma pentaphyllum*, *Polygonatum odoratum* (*yu zhu*), *Tulipa edulis* Baker (*guang ci gu*), *amaranth* (*Amaranthus albus* Linn; *Amaranthus tricolor* L.; *Amaranthus caudatus*; *Amaranthus dubius* Mart.; *Amaranthus paniculatus* L.; *Amaranthus patulus*; *Amaranthus retroflexus* L.; *Amaranthus spinosus*; *Amaranthus leucocarpus*; *Amaranthus hypochondriacus*), *Fritillaria thunbergii* (*fritillaria bulb; bei mu*), *Acacia pennatula* (*algarrobo*), *Althaea officinalis* (marshmallow), *Arnica montana* (leopard's bane), *Alpinia katsumadai* Hayata, *Aloe barbadensis* (*lu hui*), *Aloe vera*, *Angelica archangelica*, *Prunus ansu* (*shan xing*), *benzoin*, *Elephantopus scaber* L. (*di dan cao*), *Epidemium grandiflorum*, *Juncus decipiens* (*deng xin cao*), *Polygonum cuspidatum* (Japanese knotweed; *hu zhang*), *Taxus cuspidate* (yew), *Fragaria ananassa* (strawberry), *Ficus carica* (fig fruit and leaf), *Iris tectorum* (*luan wei*), *Abutilon avicennae* (Indian mallow), *shinleaf*, *Ginkgo biloba* (ginkgo seed and leaf), *Polygala tenuifolia* (*luan zhi*), locust bean, *Draba nemorosa* (woodland draba), *Amaranthus lividus* (livid amaranth), *Oryza sativa* (rice seed and seed coat), *Anethum graveolens* (dill seed), *Thymus quinquecostatus* (wild thyme), *urtica*, *Cananga odorata* (ylang ylang oil), *Conandron ramondiioides* (*ku ju tai*), *Selaginella tamariscina* (*luan bai*), oolong tea (*wu long cha*), fennel (*hui xiang*), *Genipa americana*, *Scirpus yagara* (*jing san ling*), *Lonicera*

gracilipes Miq., *Carum carvi*, *Curcuma domestica* (*yu jin*), *Spirodela polyrhiza* (duckweed; *fu ping*), *Asiasarum sieboldii* (*xi xin*), *Malva sylvestris*, *Althaea officinalis*, *Prunella* (selfheal; *xia ku cao*), *Aralia cordata*, *uva tea*, *Prunus mume* (Japanese apricot seed and fruit pulp; *wu mei*), *Quercus salicina*, *Arctostaphylos uva-ursi* (bearberry leaf), *Citrus unshiu* (Satsuma mandarin; *chen pi*), *Artemisia dracunculus* (estragon oil), *Acanthopanax senticosus* (eleuthero; *chi wu jia*), *Echinacea angustifolia*, *Cytisus adami*, *Flammulina*, *Cassia obtusifolia* (sickle senna; *jue ming zi*), *Sambucus caerulea* (blue elderberry fruit), *Canarium luzonicum* (elemi oil), *Pleuratus eryngii* (King trumpet mushroom), *Sophora japonica* (Chinese scholar tree; *huai hua*), *Radix Astragali* (astragalus root; *huang qi*), *Coptis chinensis* rhizome (*huang lian*), *Trichosanthes bracteata* Voigt, *Inula helenium* (tu mu xiang), *Sinomenium acutum* (*fang ji*), *Plantago major* var. *asiatica* (*che qian cao*), *Corylus heterophylla* (*zhen zi*), *Atractylodes japonica* (*bai shu*), *Lagerstroemia speciosa* (banana), *Alnus sieboldiana* Matsumura (alder fruit), *Crataegus pinnatifida* (Chinese hawthorn; *shan zha*), *Polygonatum falcatum* rhizome (Solomon's seal; *Polygonatum sibiricum* Red.), *Agave victoriae-reginae*, *Hordeum vulgare* (barley), *Eriocaulon* (pipewort; *gu jing cao*), *Fructus Chidii* (*she chuang zi*), *Inula britannica* (*xuan fu*), *Abelmoschus esculentus* (okra fruit), *Panax ginseng* (*ren shen*), *Hypericum erectum*, *Lamium album*, *Xanthium strumarium* (rough cocklebur; *cang er zi*), *Juglans mandshurica* (Manchurian walnut), *Dioscorea tokoro*, *Gastrodia elata* (*tian ma*), tiger lily (*bai he*), *Ononis spinosa*, *Ulmus laciniata* (*lie ye yu*), *Patrinia scabiosaeifolia* (*bai jiang*), *olluco*, *Nasturtium officinale*, *Petroselinum*, *Apium graveolens*, *Olea europaea* (olive fruit, seed and leaf), *Origanum vulgare* (oregano), *Citrus sinensis* (orange fruit, fruit peel), *Rehmannia glutinosa* Libosch (*di huang*), *Theobroma cacao* (cacao fruit, fruit peel and seed), *Diospyros kaki* (Japanese persimmon leaf), *Uncaria rhynchophylla* (*diao teng gou*), *Glechoma hederacea* (*lian qian cao*), *Cinnamomum cassia*, *Broussonetia papyrifera* (paper mulberry fruit), *Curcuma zedoaria* (*e zhu*), *Quercus dentata* (daimyo oak), *Quina morada* (cascarilla), *Rhamnus purshiana* (cascara), *Lygodium japonicum* (Japanese climbing fern; *hai jin sha*), *Chenopodium pallidicaule* (kañiwa), Japanese valerian rhizome, *Betula* sp. (*Betula pendula* Roth.; silver birch; *bai hua*), *Cucurbita moschata* (hard squash), *Ceiba pentandra* (kapok seed), *Zanthoxylum piperitum* (*shan jiao*), *Typha latifolia* (broadleaf cattail; *xiang pu*), *Matricaria chamomilla*, *Tetrapanax papyriferum* (rice-paper tree; *tong tou mu*), *Myrciaria dubia* (camu camu), *Trichosanthes cucumeroides* (snake gourd; *wang gua*), *Pinellia ternata* (crowdipper; *banxia*), *Avena fatua* (wild oat), *Paullinia cupana* (guarana seed), *Magnolia officinalis* (magnolia bark; *hou pu*), *Sterculia urens* Roxb. (gum karaya), *Pseudocodynia sinensis* (Chinese quince), *Garcinia cambogia*, *Agastache rugosa*, *Potentilla chinensis* Sering (*wei ling cai*), *Veronica undulata* (undulate speedwell), *coriolus*, *Dianthus superbus* (*shizhu*; *qumai*), *Artemisia apiacea* (*qinghao*), *Artemisia capillaries* (*yin chen hao*), *Euphorbia kansui* (*gan shui*), *Angelica keiskei*, *Glycyrrhiza glabra* (liquorice root; *gan cao*), *Manila Maguey* (cantal), *Euphorbia antisyphilitica* (candelilla), *Tussilago farfara* (coltsfoot), *Canna* (*canna lily*), *Rubus* (blackberry; *Rubus idaeus* var. *aculeatissimus*; strawberry; *Rubus phoenicolasius*; *Rubus triphyllus*; threeleaf blackberry; *Rubus palmatus* var. *coptophyllus*; raspberry), *Actinidia chinensis* (kiwifruit fruit and leaf), *Chrysanthemum morifolium* (chrysanthemum; *Chrysanthemum indicum*; *Chrysanthemum zawadskii* var. *latilobum*; *ju hua*), *Catalpa ovata* (catalpa fruit; *zi shi*), *Rumex japonicus* (*yang ti*), *Fructus Aurantii Immaturus* (*aurantii immaturus*; immature orange fruit; orange pease; *ji shi*),

Hedera rhombea (Japanese ivy), *Aloe arborescens*, *Satureja* (savory), *Cinchona*, *Cinchona succirubra* (quinine), *Phellodendron amurense* (Amur cork tree; *huang bo*), *Gymnema sylvestre*, *Brassica oleracea* var. *capitata* (cabbage), *Litsea cubeba* Pers. (litsea cubeba immature fruit), *Cucumis sativus* (cucumber), *Tamarix chinensis* (*he xi liu*; *cheng liu*), *Quillaja saponaria*, Chilean soapbark tree, *Ajuga decumbens* (*jin gu cao*), *Fortunella* (kumquat fruit), *Piper betle* (betel), *Agrimonia pilosa* (agrimony; *xian he cao*), *Psidium guajava* (guava fruit), *Parthenium argentatum* Gray (guayule), *Quercus infectoria* Olivier (*moshizi*), *Aleurites moluccana* (kukui nut), *Lycium chinense* (Chinese matrimony vine seed and leaf; *gou ji*; *di gu pi*), *Asparagus cochinchinensis* (*dimendong*), *Pueraria hirsuta* (*ge gen*), *Cinnamomum camphora* (camphor tree), *Ribes uva-crispa* (gooseberry fruit), *Artemisia annua* L. (annual wormwood; sweet wormwood; sweet annie; *huanghuahao*), *Gardenia jasminoides* (cape jasmine; *zhi zi*), *Quercus acutissima* (sawtooth oak), *Theobroma grandiflorum* (cupuacu), *Sasa albo-marginata*, Verbenaceae (fiddlewood; *ma bian cao*), *Radix Sophorae flavescentis* (*ku shen*), *Vaccinium* (cranberry fruit), *Castanea crenata* (Japanese chestnut seed, fruit and pellicle), *Curculigo latifolia* Dryand (curculigo fruit), *Citrus paradise* (grapefruit fruit and leaf), *Rhamnus japonica* Maxim. var. *decipiens*, *Ilex rotunda* (round-leaf holly; *tie dong qing*), *Rabdosia japonica*, *Syzygium aromaticum* (clove; *ding xiang*), *Thlaspi arvense* L. (field pennycress; *xi ming*), *Nepeta japonica* (*schizonepeta* spike; *jing jie*), *Celosia* (cockscomb flower and seed), *Laurus nobilis* (bay laurel), *Smilax glabra* (*tu fu ling*), *Radix Gentianae* (Chinese gentian root; *qin jiao*; *long dan cao*), *Geranium thunbergii* (Dewdrop cranesbill, Thunberg's geranium; *lao guan cao*), *Hovenia dulcis* Thunb. (Japanese raisin tree), *Dendrobium nobile* Lindl. (*shi hu*), *Citrus kinokuni hort. ex Tanaka* (*Citrus reticulata* Blanco Kinokuni), China rose (Parson's pink; *yue ji*), *Melissa officinalis*, *Vigna sinensis* (cowpea seed), red tea, *Nuphar japonicum* (*chuan gu*), *Ligusticum sinense* (*gao ben*), *Sorghum* (kaoliang; *gao liang*), *Alpinia officinarum* (*gao liang jiang*), *Coriandrum sativum* (coriander fruit), *Picrorhiza kurrooa* (*hu huang liang*), *Vaccinium myrtillus* (bilberry; *yue ju*), *Cocos nucifera* (coconut fruit), *Evodia rutaecarpa* (evodia fruit; *wu zhu yu*), *Rubus chingii* Hu (*fu pen zi*), *Piper nigrum* (black pepper; *hu jiao*), *Copaifera officinalis* (copaiba balsam), *Coffea* (coffee seed and leaf), *Magnolia kobus* (*xin yi*), *Arctium lappa* (burdock; *niu bang zi*), *Clematis apiifolia* var. *biterinata*, *Sesamum indicum* (sesame; *huma*), *Scrophularia buergeriana* (figwort; *xuan shen*), *Fructus Schisandrae chinensis* (*wu wei zi*), *Kadsura japonica* *Kadsura* (*nan wu wei zi*), *Triticum sativum* (wheat; *xiao mai*), *Oryza sativa* (rice; white bran; red bran), rice oil, *Centella asiatica* (cola seed; *Cola acuminata*), *Marsdenia condurango*, *Fucus vesiculosus* L. (bladderwrack), *Amorphophallus konjac*, *Symphytum officinale* L. (comfrey; *zi cao*), *Agave sisalana* (sisal), *Clematis chinensis* (*wei ling xian*), *Prunus serrulata* (cherry blossom tree leaf, flower, fruit, and bark; *Prunus lannesiana* Wils. var. *speciosa* Makino; *Prunus serotina*; *Prunus jamasakura* Sieb. ex Koidz.; *Prunus yedoensis* Matsum.; *Prunus incisa* Thunb. ex Murray; *Prunus maximowiczii* Ruprecht; *Prunus apetata* (Sieb. et Zucc.) Franch. et Savat.; *Prunus subhirtella* Miquel cv. *Subhirtella*; *Prunus serrulata* var. *lannesiana*; *Prunus kanzakura*), *Prunus avium*, *Punica granatum* (pomegranate), *Sasa palmate*, *Camellia sasanqua*, *Alisma orientale* (*ze xie*), *Ipomoea batatas* (sweet potato), *Saccharum officinarum* (sugar cane), *Beta vulgaris* L. var. *rapa Dumort.* f. *rubra* DC (beet), *Zizyphus vulgaris* (jujube berry; *suai zao ren*), *Crocus sativus* (saffron; *fan hong hua*), *Citrus grandis* (jabong fruit; shaddock), *Saponaria officinalis*, *Rubus spectabilis* (salmonberry

fruit), *Cimicifuga simplex* (*sheng ma*), *Salvia splendens* (sage), *Lobelia sessilifolia* (water lobelia; *shan geng cai*), *Pterocarya rhoifolia*, *Epimedium sagittatum* (Sieb. et Zucc.) Maxim. var. *sagittatum*, *Panax pseudoginseng* Wall. var. *pseudoginseng* (*san qi hua*), *Cornus officinalis* (cornus fruit; *shan zhu yu*), *Zanthoxylum piperitum* (*shan jiao*), *Radix Sophorae subprostratae* (*shan dou gen*), *Vitellaria paradoxa* (shea), *Butyrospermum parkii* Kotschy (butter tree fruit), *Lentinus edodes* (shiitake mushroom), *Aster tataricus* (*zi wan*), *Digitalis purpurea* (purple foxglove), *Quisqualis indica* (*shi jun zi*), *Perilla frutescens* (beefsteak plant; *zi su*), *Pterocarpus santalinus* (red sandal tree), *Tilia japonica*, *Magnolia officinalis*, *Forsythia viridissima* Lindl. (*lian qiao*), *Lyophyllum decastes* (*Lyophyllum fumosum*; *Lyophyllum connatum*; *Hypsizygus marmoreus*; *Hypsizygus ulmarius*), *Spiraea ulmaria*, *Solanum tuberosum*, *Paeonia albiflora* (*zhuo yao*), *Adenophora polymorpha* (*sha shen*), *Jasminum officinalis* (jasmine; *Jasminum sambac*; *Nyctanthes sambac*), *Ophiopogon japonicus* (mondo grass; *mai dong*), *Amomum* (amomi semen), *Coix lacryma-jobi* (Job's tears), *Trachycarpus fortunei* (windmill palm fruit; *zong lu*), *Zingiber officinale* (ginger; *sheng jiang*), *Dichroa febrifuga* (*chang shan*), *Acorus calamus* (calamus root; sweet flag), *Quercus myrsinaefolia* seed (*Cyclobalanopsis myrsinaefolia*), *Sesbania grandiflora* Pers. seed, *Abrus cantoniensis* (*ji gu cao*), *Iris florentina* Linné, *Parthenocissus tricuspidata* (Japanese creeper flower; Japanese ivy; Boston ivy), *Nandina domestica* Thunb. var. *leucocarpa* Makino (*nan tian zhu*), *Cinchona*, *Daphne* (*rui xiang*), *Cinnamomum verum* J. Presl. (*cinnamomum*), *Citrullus batich* (water melon; *xi gua*), *Lonicera japonica* (Japanese honeysuckle; *jin yin hua*; *yin dong*), *Rumex acetosa* (sour dock; *suan mo*), *Stevia* (sweetleaf), *Fragaria* (strawberry fruit), *Cynanchum paniculatum* (*xu chang qing*), *Equisetum arvense* (field horsetail; *wen jing*), *Portulaca oleracea* (purslane; *ma chi yan*), *Prunus salicina* (Japanese plum fruit), *Pinus sylvestris* (Scots pine cone), *Larix occidentalis* (Western larch), *Hedera helix*, *Juglans regia* (English walnut), *Crataegus oxyacantha*, *Taraxacum officinale* (dandelion), *Cameraria ohridella* (Rosskastanien-Miniermotte; horse chestnut), *Pyrus communis* (European pear fruit), *Filipendula ulmaria* (queen of the meadow), *Sambucus nigra* (elder tree), *Juniperus communis* (juniper; *du song*), *Achillea millefolium* (yarrow), *Rosa centifolia*, *Capparis spinosa* L. (caper), *Viscum album*, *Mentha piperita* (peppermint), *Armoracia rusticana* (horseradish; *Cochlearia armoracia*), *Lycopodium clavatum* (*shi song*), *Dendrobium moniliforme* (*sh i hu*), *Malva sylvestris* (mallow), *Polygala senega* var. *latifolia*, *Polygala senega* (Seneca snakeroot), *Apiaceae*, *Apium graveolens* (celery), *Cnidii rhizome* (*chuan xiong*), *Andrographis paniculata* (*chuan xin lian*), *Melia azedarach* (chinaberry), *Sweetia japonica* (*zhang ya cai*), *Cassia acutifolia* (senna fruit and leaf), *Clematis* (*tie xian lian*), *Amomum costatum*, *Fagopyrum tataricum* (buck wheat seed), *Dioscorea cirrhosa* Lour., *Rheum* (rhubarb), *Raphanus sativus* (Japanese radish), *Glycine max* (soybean; *da dou*), *Citrus aurantium* (orange fruit peel and fruit), *Eclipta prostrata* (*han lian cao*), *Euphorbia pекinensis* (*da ji*), *Cibotium barometz* (*gou ji*; *jin mao gou*), *Prunus avium* (dark sweet cherry fruit), *Alcea* (hollyhock), *Thymus vulgaris* (thyme; *bai li xiang*), *Dioscorea gracillima* (*Dioscorea tokoro*), *Salix subfragilis*, *Tamarindus indica* (tamarind seed), *Allium cepa* (onion), *Magnolia salicifolia* (*xin yi*), *Aralia elata* (Japanese angelica tree fruit, leaf and root bark), *Lupinus mutabilis* (tarwi), *Salvia miltiorrhiza* (*dan shen*), *Taraxacum platycarpum* (*Taraxacum japonicum*; *Taraxacum mongolicum*; *pu gong ying*), *Dipterocarpaceae* (gum dammar), *Prunus avium* (cherry fruit), *Imperata cylindrica* (cogongrass fruit, root and sprout), *Panacis japonici*

rhizoma (zhu jie shen), Cichorium endivia (chicory), Rheum coreanum Nakai (da huang), Ulmus macrocarpa (da guo yu), Panax ginseng (ren shen), Artemisia argyi Lev. et Vant. (ai hao), Polyporus umbellatus (zhu ling), Oenothera biennis (evening primrose), Agaricus bisporus, Camellia japonica, Centella asiatica, Sagina japonica (Japanese pearlwort; qi gu cao), Commelina communis (Asiatic dayflower; ya tuo cao), Vigna umbellata (chi xiao dou), Polygonum multiflorum (he shou wu), Tetragonia tetragonoides (fan xing), Codonopsis lanceolata (yang ru; lun ye dang shen), Farfugium japonicum, Erythrina variegata, Juglans regia, Rubus caesius (dewberry fruit), Gelidium amansii, Rubus suavisissimus, Linderia strychnifolia (wu yao), Benincasa carifera (wax gourd seed), Uncaria rhynchophylla, Capsicum annuum (chili pepper; xin jiao; la jiao), Angelica acutiloba (dang gui), Calendula officinalis, Dipsacus asper Wall. (chuan xu duan; chuan duan), field corn, Ligustrum japonicum (nü jing zi), Gentiana scabra Bunge (long dan cao), Equisetum hyemale (mu zei), Houttuynia (yu xing cao), Cephaelis ipecacuanha (tu gen), Cuscuta australis, Eucommia ulmoides (eucommia brak, leaf and root; du zhong), Fraxinus japonica, Solanum lycopersicum (tomato), gum tragacanth (Astragalus adscendens; Astragalus gummifer; Astragalus tragacanthus), Gleditschia triacanthos seed, Potentilla erecta, Populus suaveolens (Japanese poplar), Abelmoschus monihot (sunset hibiscus), Dioscorea batatas (Chinese yam; shan yao), Ruscus aculeatus (butcher's broom), Elsholtzia ciliata, Capsella bursa-pastoris, canola, Canavalia gladiata (sword bead; dao dou), Citrus natsudaikai (Japanese summer orange), Zizyphus vulgaris (jujube; suan zao), Rosa laevigata (jin ying zi), Dipsacus japonicus (xu duan), Pholiota nameko, Polygonatum rhizoma (huang jing), Arachis hypogaea (peanut; groundnut; lu hua sheng), Nandina domestica fruit, Boehmeria nivea (Linn.) Gauch. (ning ma), Picrasma ailanthoides, Artemisia absinthium (ku ai), Myristica fragrans (nutmeg), Cinnamomum cassia (cinnamon bark; cinnamon stick; Cinnamomum loureirii; Cinnamomum verum; Cinnamomum japonicum; gui pi; gui zhi), Allium tuberosum (leek), Sambucus sieboldiana (elder flower; sambucus fruit, flower, stem and leaf), Allium sativum (garlic; da suan), Rhus javanica (sumac), Allium fistulosum (welsh onion), Albizia julibrissin Durazz (silk tree; he huan), Cirsium (thistle), Rosa multiflora, Achillea millefolium (milfoil), Angelica decursiva (qian hu; zi hua qian hu), Rosa canina (dog rose), Prunus mira, palm, Annas comosus (pineapple fruit), Hibiscus (rosemallow; Chinese rose; Hibiscus schizopetalus; Hibiscus sabdariffa; roselle), Drynaria fortunei (gu sui bu), Dictamnus albus (bai xian pi), huckleberry fruit, Stellaria media (chickweed; fan lü), Corylus heterophylla (Siberian hazelnut), Scopolia japonica (Japanese belladonna), Ocimum basilicum (basil), Melumbo nucifera (lotus flower, fruit and seed), Petroselinum crispum (parsley), Hordeum vulgare (barley), Solanum tuberosum (batata), Lophatherum gracile (black bamboo; Phyllostachys), Pogostemon cablin (patchouli), Mentha arvensis (menthe; peppermint leaf; bo he), Coix lacryma-jobi L. var. frumentacea Makino (coix seed), Anemarrhena asphodeloides (zhi mu), Musa paradisiaca (banana), Origanum vulgare (oregano), Eschscholzia (Fructus Tribuli; Tribulus terrestris), Vanilla fragrans (vanilla bean), Carica papaya (papaya), Gnaphalium affine (cudweed; shu qü cao), Cassia obtusifolia (sickle senna whole plant, stem and leaf), Capsicum annuum (paprika), Vitex rotundifolia (man jing; man jing zi), Cyperus rotundus (purple nutsedge; xiang fu zi), Tribulus terrestris (caltrop), Rosa rugosa (sweetbrier), Radix Glehniae (glehnia root; bei sha shen), Hamamelis virginiana, Rosa (rose; mei gui), Agaricus campestris (agaric; field mushroom; Agaricus arvensis; Agaricus abruptibulbus), Aspidistra elatior, Parietaria officinalis L. (upright pellitory),

Ulmus davidiana var. *japonica* (Japanese elm bark, cortex and leaf; *chun yu*), *Sterculia scaphigera* Wall. (*pang da hai*), *Artocarpus integra* (breadfruit), *Belamcanda chinensis* (*gan she*), *Codonopsis pilosula* (*dang shen*), pu'er tea (*pu'er cha*), *Carya illinoensis* (pecan nut), *Lycoris radiata* (hurricane lily; red spider lily; *shi suan*), *Isodon japonicus*, *Trapa japonica* (water chestnut), *Pistacia vera* L., (*pistachio*), *Beta vulgaris* (beet), *Pyrrosia lingua* (*shi wei*), *Genista tinctoria* (dyer's broom), *Achyranthes bidentata* (*niu xi*), *Chamaecyparis obtuse* (Japanese cypress), *Cupressaceae* (cypress), *Ricinus communis*, *Helianthus annuus* (sunflower), *Capsicum annuum* (bell pepper), *Semiaquilegia axoides* (*tian kui*), *Typha angustifolia* (narrowleaf cattail; *xiang pu pu huang*), *Agaricus blazei* Murr., *Pimenta*, *Angelica dahurica* (*Radix Angelicae; bai zhi*), *Bletilla striata* (Thunberg) Reichenbach (*bai ji*), *Amaranthaceae*, *Althaea officinalis* L., *Pulsatilla chinensis* (*bai tou weng*), *Eriobotrya japonica* (loquat fruit, leaf and stem), *Piper Betle* (betel fruit; pinang), *Piper kadmura* (Chois.) Ohwi., *Petasites japonica* (lagwort; Japanese butterbur), *Tussilago farfara* (coltsfoot flower and leaf; *kuan dong*), *Eupatorium fortunei* (thoroughwort; *pei lan*), *Lablab purpurea* (hyacinth bean), *Vitis vinifera* (grape fruit, fruit peel, seed and leaf), *Fagus crenata* (beech), *Cordyceps sinensis* (*dong chong xia cao*), *Periandra mediterranea*, *Paffia iresinoides* (Brazilian ginseng), *Ribes nigrum* (black currant fruit), *Rubus eubatus* (blackberry; bramble raspberry), *Prunus domestica* (plum fruit), *Furcellaria fastigiata*, *Vaccinium* (blueberry), *Prunus domestica* (prune), *Plantago asiatica*, *Phaseolus aureus* (*lü dou*), *Luffa cylindrica* (sponge gourd; loofah), *Carthamus tinctorius* (safflower; *hong hua*), *Agave fourcroydes* (Henequen), *Atropa belladonna*, berry fruit, *Cinchona* (Jesus's bark; Peruvian bark), *Sedum erythrosticum* (stonecrop), boysenberry fruit, *Bassia scoparia* (L.) A. J. Scott (summer cypress; *di fu*), *Impatiens balsamina* (garden balsam; *feng xian hua; tou gu cao*), *Radix Saposhnikovia* (*fang feng*), *Spinacia oleracea* (spinach), *Physalis alkekengi* (physalis; Japanese bladder cherry), *Magnolia obovata* (magnolia; *hou pu*), *Rhizoma Atractylodis macrocephalae* (*cang shu*), *Sedum aizoon* (Aizoon stonecrop), *Echinacea angustifolia* (echinacea), *Ficus religiosa* (peepul tree; *pu ti shu*), *Paeonia suffruticosa* (peony; peony bark; *mu dan; mu dan pi*), *Humulus lupulus* (hop), *Simmondsia chinensis* (jojoba), whortleberry fruit (bilberry), *Cistanche deserticola* (*rou cong rong*), *Dendrobium officinale* K. Kimura et Migo. (*tie pi shi hu*), *Arisaema heterophyllum* Blume, *Grifola frondosa* (hen of the woods), *Ephedra* (*ma huang*), *Lepidium meyenii* (maca), *Macadamia ternifolia*, *Digenea* (*hai ren cao*), *Morus alba* (white mulberry bark and leaf), *magnolia*, *Tropaeolum tuberosum* Ruiz & Pavón (mashua), *Actinidia polygama* (silver vine; *ge zao*), pine cone, *Pinus* (pine leaf, bark and root), *Pachyma hoelen*, *Origanum vulgare*, *Adenophora stricta* (*xing ye sha shen*), *Morus* (mulberry fruit), *Cydonia oblonga*, *Mangifera indica* (mango), *Garcinia mangostana* (mangosteen), *Juglans mandshurica*, *Citrus reticulata* (mandarin orange fruit), *Ganoderma lucidum* (*ling zhi*), *Fructus Aurantii Immaturus* (immature bitter orange; *Citrus aurantium*), *Bupleurum falcatum* (*chai hu*), *Ottelia japonica*, *Lobelia chinensis* (Chinese lobelia; *ban bian lian*), *Lythrum anceps* (loosestrife; *qian qü cai*), *Polygonum aviculare* (*bian xü*), *Menyanthes trifoliata* (bogbean), *Cryptotaenia japonica* (Japanese hornwort), *Mentha viridis* (spearmint), *mimosa*, *Zingiber mioga* (*mioga*), *Synsepalum dulcificum* (miracle fruit fruit), *Commiphora myrrha* (*mo yao*), *Terminalia chebula* (myrobalan), *Hibiscus syriacus* (althea; rose of Sharon; *mu jin*), *Aphananthe aspera*, *Sapindus mukurossi* (soapberry), *Lithospermum erythrorhizon* (stoneweed), *Callicarpa japonica*, *Zea mays* (maize), *Milletia reticulata* (*ji xue*

teng), *Leonurus sibiricus* (*yi mu cao*), *Melaleuca alternifolia*, *Melissa officinalis* (*Melissa*), *Melilotus officinalis*, *Cucumis melo* (melon fruit), *Artemisia Mongolia*, *Phyllostachys pubescens*, *Schinus molle*, *Saussurea lappa* (*yun mu xiang*), *Rheum palmatum*, *Prunus persica* (peach leaf, seed, flower and fruit), etiolated seedling, *Prunus cerasus* (sour cherry fruit; Morello cherry), *mulukhiya*, *Conus floridulus*, *Fructus Alpiniae oxyphyllae* (bitter cardamom; *yi zhi*), *Centaurea cyanus* (centaury; cornflower), *Monarda didyma*, *Smallanthus sonchifolius* (*yacon*), *Alnus firma* fruit, fruit peel, panicle), *Myrica gale* (sweetgale), *Fatsia japonica* (Japanese fatsia; *ba jiao jin pan*), *Viscum coloratum* (mistletoe), *Kalopanax pictus* (*Salix gilgiana* Seemen; *Salix subfragilis*; *Salix sepulcralis*; *Salix chaenomeloides* Kimura; *Salix gracilistyla*; *Salix integra*; *Salix kinuyanagi*; *Salix koriyanagi* Kimura; *Salix matsudana* cv. *Tortuosa*; *Salix reinii*; *Salix sieboldiana*; *Toisusu urbaniana*; *Salix viminalis*; *Salix vulpina* Andersson; *Populus suaveolens*), *Polygonum hydropiper* (water pepper leaf and stem), *Cayratia japonica*, *Ardisia japonica* (*zi jin niu*), *Carpesium abrotanoides* (*tian ming jin*), *Phytolacca esculenta* (pokeweed; *shang lu*), *Betula* (birch), *Myrica rubra* (bayberry; *yang mei*), *Artemisia montana*, *Eucalyptus*, *Saxifraga granulata* L. (meadow saxifrage), *Yucca* (yucca fruit), *Lilium* (lily), *Angelica dahurica*, *Artemisia princeps* (*ai ye*), *Ompharia lapidescens*, *Citrus aurantifolia* (lime fruit), *Secale cereal* (rye), *Momordica grosvenori* Swingle (rakanka fruit; *luo han guo*), *Rubus idaeus* (raspberry leaf and fruit), *Krameria triandra*, *Allium bakeri* (*xie bai*), *Lavandula vera* (lavender), *Euphoria longana*, *Agave* (agave), green tea, *Malus domestica* (apple fruit, seed, leaf and root), *Gentiana scabra* (lindow), *Rubus suavissimus* (*tian cha*), *Litchi chinensis* (lychee fruit and kernel), *Lactuca sativa* (lettuce), *Ribes rubrum* (redcurrant fruit), *Citrus lemon* (lemon fruit), *Cymbopogon citratus* (lemongrass), *Forsythia viridissima* Lindl. (*lian qiao*), *Astragalus sinicus* (Japanese milk-vetch), *Copernicia cerifera*, loganberry fruit, *Rosmarinus officinalis* (rosemary), *Rosa canina* (rosehip), *Eutrema wasabi* (Japanese horseradish), *Sanguisorba officinalis* (burnet), etc.

[0029] In addition, the following seawater materials may be included: sea salts; dry residues of seawater; mineral salts obtained from seawater of the Dead Sea or Atlantic Ocean such as sodium chloride, magnesium chloride, potassium chloride, etc.; seamed and mud (fango) such as Italian fango, German fango, Eifel fango, Freiburg fango from different locales (which contain silicon dioxide, titanium dioxide, aluminum oxide, iron oxide, manganese oxide, sodium oxide, potassium oxide, magnesium oxide calcium oxide, strontium oxide, sodium, potassium, magnesium, calcium, chromium, iron, copper, nickel, zinc, lead, manganese, arsenic, water), etc.

[0030] The following representative marine algae may be included: green algae (*Chlorella vulgaris*, *Chlorella pyrenoidosa*, *Chlorella ellipsoidea*, *Enteromorpha* [*Enteromorpha linza*, *Enteromorpha compressa*, *Enteromorpha intestinalis*, *Enteromorpha crinita*]), brown algae (*Fucus vesiculosus* [*Laminaria japonica*, *Laminaria ochotensis*, *Laminaria religiosa*, *Laminaria angustata*], *Undaria pinnatifida*, *Undaria undaroides*, *Undaria peterseniana*, *Macrocystis pyrifera*, *Hizikia fusiformis*, *Fucus distichus*), red algae (*Cyrtomenia sparsa*, *Gelidium elegans* Kuetzing, *Ptilophora subcostata*, *Gelidium japonicum*, *Pterocladia capillacea*, *Pterocladia capillacea*, *Pterocladia densa*, *Yatabella*, *Acanthopeltis japonica* Okamura, *Gelidiella*, *Meristotheca papulosa*, *Eucheuma serra*, *Eucheuma amakusaense*, *Eucheuma*, *Eucheuma*

arnoldii Weber-van Bosse, Chondrus crispus Stackhouse, Chondrus giganteus, Chondrus crispus, Chondrus yendoii, Chondrus armatus, Chondrus pinnulatus, Chondrus pinnulatus, Chondracanthus tenellus, Chondracanthus teedii, Chondracanthus intermedius, Chondrus verrucosus Mikami, Acrosorium flabellatum Yamada, Acrosorium venulosum, Acrosorium polyneurum Okamura, Acrosorium yendoii Yamada), etc.

[0031] Additionally, other algae may also be included, for example: green algae [Chlamydomonas [Chlamydomonas spp.], Dunaliella [Dunaliella spp.], Chroococcus [Chroococcus spp.], Pandorina [Pandorina spp.], Volvox [Volvox spp.], Sphaerocystis, Tetraspora, Spirogyra (Mougeotia spp., Spirogyra spp.), Draparnaldia, Ulotrichaceae (Ulotrichaceae spp.), Ulvaceae (Ulva pertusa Kjellman, Ulvales Ulvaceae, Ulva arasakii Chihara), Schizogoniales (Schizogoniales spp.), Vaucheria, Cladophoraceae (Cladophora japonica Yamada, Cladophora sakaii Abbott, Cladophora glomerata, Cladophora sauteri), Ventriscaria (Valonia macrophysa, Valonia aegagropila), Boergesenia (Boergesenia spp.), Caulerpa (Caulerpa okamurae, Caulerpa racemosa, Caulerpa brachypus Harvey, Caulerpa scalpelliformis), Bryopsis, Codium (Codium spp., Codium subtubulosum Okamura, Codium cylindricum Holmes, Codium latum Suringar.), Acetabularia (Acetabularia spp.), Chaetomorpha (Chaetomorpha spiralis Okamura, Chaetomorpha monilifera, Chaetomorpha okamurae Ueda, Chaetomorpha melagonium), Cosmarium, Dictyosphaeria (Dictyosphaeria spp.), Monostroma (Monostroma spp., Monostoma latissimum, Monostroma grevillei, Kornmannia leptoderma (Kjellman) Bliding), Oedogonium, Trentepohlia (Trentepohlia spp.), Zygnema, Vaucheria, etc.)

[0032] Blue algae (Aphanothece (Aphanothece spp.), Microcystis, Nostoc (Nostoc verrucosum Vaucher, Nostoc commune, Nostoc flagelliforme), Oscillatoria, Spirulina (Spirulina spp.), Trichodesmium, etc.)

[0033] Brown algae (Pilayella (Pilayella spp.), Ectocarpus (Ectocarpus spp.), Botrytella (Botrytella spp.), Ralfsiaceae, Sphacelaria (Sphacelaria californica Sauvageau ex Setchell et Gardner), Halopteris (Halopteris spp.), Cutleria (Cutleria spp., Cutleria multifida (Turner) Greville, Cutleria adspersa (Roth) De Notaris), Dictyota (Dictyota spp.), Pachydictyon (Pachydictyon spp., Dilophus okamurae Dawson), Spatoglossum (Spatoglossum spp.), Dictyopteris (Dictyopteris divaricata (Okamura) Okamura, Dictyopteris spp., Dictyopteris prolifera (Okamura) Okamura), Stypopodium (Stypopodium spp.), Padina (Padina spp., Padina crassa Yamada, Padina boryana Thivy), Elachistaceae, Halothrix (Halothrix spp.), Saundersella (Saundersella spp.), Ceratophyllum (Ceratophyllum spp.), Chordaria (Chordaria flagelliformis), Cladosiphon (Cladosiphon okamurae), Tinocladia (Tinocladia spp.), Sphaerotrichia [Sphaerotrichia spp.], Hydrilla [Hydrilla spp.], Acrothrix [Acrothrix spp.], Nemacystus (Nemacystus spp.), Ishige (Ishige spp., Ishige sinicola (Setchell et Gardner) Chihara), Carpomitra (Carpomitra spp.), Sabellastarte (Sabellastarte japonica), Nereia (Nereia spp.), Desmarestia (Desmarestia spp., Desmarestia viridis, Desmarestia tabacoides Okamura), Akkesiphycus (Akkesiphycus spp.), Punctaria (Punctaria spp.), Petalonia (Petalonia spp.), Asperococcaceae, Coilodesme (Coilodesme japonica Yamada), Colpomenia (Colpomenia spp., Colpomenia bulbosa), Hydroclathrus (Hydroclathrus spp.), Stictosiphon (Stictosiphon spp.), Myelophycus (Myelophycus simplex), Striaria (Striaria spp.), Scytosiphon (Scytosiphon spp.), Dictyosiphon (Dictyosiphon spp.), Chorda (Chorda spp.), Agarum (Agarum spp.),

Costaria (*Costaria* spp.), *Cymathære* (*Cymathære* spp., *Cymathære japonica* Miyabe et Nagai), *Laminaria* (*Laminaria* spp., *Laminaria longipedalis* Okamura, *Laminaria diabolica*, *Laminaria yezoensis*, *Laminaria angustata*, *Laminaria yendoana* Miyabe), *Kjellmaniella* (*Kjellmaniella* spp.), *Eckloniopsis* (*Eckloniopsis* spp.), *Ecklonia* (*Ecklonia* spp., *Ecklonia stolonifera* Okamura, *Ecklonia kurome* Okamura), *Thallasiophyllum* (*Thallasiophyllum* spp.), *Streptophyllopsis* (*Streptophyllopsis kuroshioense* (Segawa) Kajimura), *Arthrothamnus* (*Arthrothamnus* spp.), *Eisenia* (*Eisenia* spp.), *Alaria* (*Alaria* spp., *Alaria crassifolia* Kjellman), *Silvetia* (*Silvetia* spp.), *Hormophysa* (*Hormophysa* spp.), *Turbinaria* (*Turbinaria* spp.), *Myagropsis* (*Myagropsis myagroides*, *Myagropsis* spp., *Myagropsis yendoi* Fensholt, *Sargassum* (*Sargassum nipponicum* Yendo, *Sargassum hemiphyllum* C. Agardh, *Sargassum segii* Yoshida, *Sargassum horneri*, *Sargassum filicinum* Harvey, *Sargassum fulvellum*, *Sargassum sagamianum* Yendo, *Sargassum nigrifolium* Yendo, *Sargassum piluliferum* C. Agardh, *Sargassum* spp., *Sargassum patens* C. Agardh, *Sargassum thumbergii*, *Sargassum ringgoldianum* Harvey, *Sargassum kjellmanianum*, *Sargassum micracanthum* Endlicher, *Sargassum siliquastrum* C. Agardh, *Sargassum macrocarpum* C. Agardh, *Sargassum giganteifolium* Yamada), *Coccophora* (*Coccophora* spp.), *Scytosiphon* (*Scytosiphon lomentaria* (Lyngbye) Link), etc.).

[0034] Red algae (*Bangia* (*Bangia* spp.), *Porphyra* (*Porphyra tenera*, *Porphyra yezoensis*, *Porphyra pseudolinearis* Ueda, *Porphyra deutata*, *Porphyra* spp., *Porphyra variegata*), *Rhodochorton* (*Audouinella howei* (Yamada) Garbary), *Trichogloea* (*Trichogloea hequieni*), *Liagora* (*Liagora caenomyces*, *Liagora japonica*, *Liagora ceranoides*), *Nemalion* (*Nemalion* spp., *Nemalion multifidum* (Weber et Mohr) J. Agardh), *Namalion* (*Namalion vermiculare* Suringar, *Helminthocladia yendoana* Narita), *Dermonema* (*Dermonema* spp.), *Scinaia* (*Scinaia japonica* Setchell, *Scinaia okamurae* (Setchell) Huismann), *Actinotrichia* (*Actinotrichia* spp.), *Tricleocarpa* (*Tricleocarpa cylindrical*, *Galaxaura falcata* Kjellman), *Ptilonia* (*Ptilonia okadae* Yamada), *Entacmaea* (*Entacmaea quadricolor*), *Asparagopsis* (*Asparagopsis taxiformis*, *Asparagopsis taxiformis* (Delile) Trevisan), *Gelidium* (*Gelidium divaricatum* Martens, *Gelidium pusillum* (Stackhouse) Le Jolis, *Gelidium pacificum*, *Gelidium subfastigiatum* Okamura, *Gelidium tenue*, *Gelidium* spp., *Gelidium linoides*), *Dudresnaya* (*Dudresnaya* spp., *Dudresnaya minima* Okamura), *Hyalosiphon* (*Hyalosiphon* spp.), *Pikea* (*Pikea* spp.), *Dumontia* (*Dumontia* spp., *Dumontia contorta* (Gmelin) Ruprecht), *Masudaphycus* (*Masudaphycus* spp.), *Constantinea* (*Constantinea subulifera* Setchell), *Neodilsea* (*Neodilsea* spp., *Neodilsea tenuipes* Yamada et Mikami), *Chondrococcus* (*Chondrococcus hornemanni*, *Chondrococcus* spp.), *Millepora* (*Millepora* spp.), *Peyssonnelia* (*Peyssonnelia caulifera* Okamura, *Peyssonnelia japonica*), *Amphiroa* (*Amphiroa dilatata*), *Corallina* (*Corallina* spp.), *Grateloupia* (*Grateloupia filicina* (Lamouroux) C. Agardh, *Grateloupia ramosissima* Okamura, *Grateloupia divaricata* Okamura, *Grateloupia livida* (Harvey) Yamada, *Grateloupia okamurae* Yamada, *Grateloupia imbricata* Holmes, *Grateloupia carnosa* Yamada et Segawa, *Grateloupia elliptica* Holmes, *Grateloupia turuturu* Yamada), *Halymenia* (*Halymenia agardhii*, *Halymenia* spp., *Halymenia acuminata* (Holmes) J. Agardh), *Prionitis* (*Prionitis* spp.), *Polyopes* (*Polyopes polydeoides* Okamura), *Carpopeltis* (*Carpopeltis formosana* Okamura, *Carpopeltis* spp., *Carpopeltis affinis* (Harvey) Okamura, *Carpopeltis prolifera* (Hariot) Kawaguchi et Masuda, *Carpopeltis crispata* Okamura, *Carpopeltis divaricata*), *Prionitis* (*Prionitis schmitziana* Okamura), *Gloiosiphonia* (*Gloiosiphonia capillaris* (Hudson) Carmichael), *Schimmelmanna* (*Schimmelmanna* spp.),

Gloiopeltis (*Gloiopeltis complanata* (Harvey) Yamada, *Gloiopeltis furcata* (Postels et Ruprecht) J. Agardh, *Gloiopeltis tenax* (Turner) Decaisne), *Tichocarpus* (*Tichocarpus* spp.), *Callophyllis* (*Callophyllis japonica* Okamura, *Callophyllis crispata* Okamura, *Callophyllis palmate*, *Callophyllis adhaerens* Yamada, *Callophyllis adnata* Okamura), *Callophyllis* (*Callophyllis okamurae* Silva), *Cirrularcarpus* (*Cirrularcarpus* spp.), *Kallymenia* (*Kallymenia sessilis* Okamura, *Kallymenia* spp., *Kallymenia callophyllodes* Okamura et Segawa), *Schmitzia* (*Schmitzia* spp.), *Tsengia* (*Tsengia* spp., *Tsengia lancifolia* (Okamura) Masuda et Guiry, *Platoma* (*Platoma* spp.), *Schizymenia* (*Schizymenia* spp.), *Halarachnion* (*Halarachnion latissimum* Okamura), *Sebdenia* (*Sebdenia yamadae* Okamura et Segawa), *Solieria* (*Solieria pacifica* (Yamada) Yoshida, *Solieria tenuis* Zhang et Xia), *Meristotheca* (*Meristotheca papulosa* (Montagne) J. Agardh), *Turnerella* (*Turnerella* spp.), *Catenella* (*Catenella caespitosa* (Withering) Irvine), *Plocamium* (*Plocamium* spp., *Plocamium cartilagineum* (Linnaeus) Dixon), *Hypnea* (*Hypnea charoides* Lamouroux, *Hypnea saidana* Holmes, *Hypnea variabilis* Okamura, *Hypnea japonica* Tanaka), *Phacelocarpus* (*Phacelocarpus japonicus* Okamura), *Caulacanthus* (*Caulacanthus ustulatus* (Turner) Kützling), *Sarcodia* (*Sarcodia ceylanica* Harvey ex Kützling), *Gracilaria* (*Gracilaria vermiculophylla* (Ohomi) Papenfuss, *Gracilaria chorda* Holmes, *Gracilaria bursa-pastoris* (Gmelin) Silva, *Gracilaria gigas* Harvey, *Gracilaria* spp., *Gracilaria textorii* (Suringar) Hariot), *Gelidiopsis* (*Gelidiopsis* spp.), *Gracilaria* (spp.), *Tylotus* (*Tylotus lichenoides* Okamura), *Ceratodictyon* (*Ceratodictyon spongiosum*), *Ahnfeltiopsis* (*Ahnfeltiopsis flabelliformis* (Harvey) Masuda), *Ahnfeltiopsis* (*Ahnfeltia plicata*, *Ahnfeltiopsis consinna* (J. Agardh) Silva et DeCrew), *Ahnfeltiopsis paradoxa* (Suringar) Masuda, *Stenogramma* (*Stenogramma interrupta* (C. Agardh) Montagne), *Chondracanthus* (*Chondracanthus tenellus* (Harvey) Hommersand), *Mastocarpus* (*Mastocarpus mamillatus* Masuda et Yoshida, *Mastocarpus pacificus* (Kjellman) Perestenko, *Mastocarpus* spp.), *Chondrus* (*Chondrus yendoii* Yamada et Mikami in Mikami), *Mazzaella* (*Mazzaella japonica* (Mikami) Hommersand), *Gloioderma* (*Gloioderma* spp.), *Fauchea* (*Fauchea spinulosa*, *Fauchea stipitata*), *Chrysomenia* (*Chrysomenia wrightii* (Harvey) Yamada, *Crysomenia okumurai*), *Coelarthrum* (*Coelarthrum* spp., *Coelarthrum boergesenii* Weber-van Bosse), *Botryocladia* (*Botryocladia* spp.), *Cryptarachne* (*Cryptarachne* spp.), *Palmaria* (*Palmaria palmata* (Linnaeus) Kuntze, *Palmaria* spp., *Sparlingia pertusa* (Postels et Ruprecht) J. Agardh.), *Webberella* (*Webberella micans* Hauptfleisch), *Halosaccion* (*Halosaccion* spp.), *Lomentaria* (*Lomentaria catenata* Harvey, *Lomentaria pinnata*, *Lomentaria okamurae*), *Champia* (*Champia bifida* Okamura, *Champia expansa*), *Chaetomorpha* (*Chaetomorpha* spp.), *Ceramium* (*Ceramium tenerium*, *Ceramium paniculatum* Okamura, *Ceramium japonicum*, *Ceramium boydenii* Gepp), *Campylaeophora* (*Campylaeophora hypnaeoides* J. Agardh, *Campylaeophora crassa* (Okamura) Nakamura), *Herpochondria* (*Herpochondria elegans* (Okamura) Itono), *Reinboldiella* (*Reinboldiella schmitziana* (Reinbold) De Toni), *Congregatocarpus* (*Marionella schmitziana* (De Toni et Okamura) Yoshida, *Congregatocarpus pacificus* (Yamada) Mikami, *Neoholmesia japonica*), *Erythrogllossum* (*Erythrogllossum* spp.), *Polyneura* (*Polyneura japonica* (Yamada) Mikami), *Neohypophyllum* (*Neohypophyllum middendorffii* (Ruprecht) Wynne), *Myriogramme* (*Myriogramme* spp.), *Hideophyllum* (*Hideophyllum yezoense*), *Acrosorium* (*Acrosorium venulosum* (Zanardini) Kylin, *Acrosorium flabellatum* Yamada, *Acrosorium polyneurum* Okamura, *Acrosorium yendoii* Yamada), *Martensia* (*Martensia fragilis* Harvey), *Caloglossa* (*Caloglossa continua* (Okamura) King et Puttock), *Dasya* (*Dasya sessilis* Yamada), *Heterosiphonia* (*Heterosiphonia japonica*

Yendo, *Heterosiphonia pulchra* (Okamura) Falkenberg), *Dasyopsis* (*Dasyopsis* spp.), *Polysiphonia* (*Polysiphonia* *morrowii* Harvey, *Polysiphonia* spp.), *Digenea* (*Digenea simplex*), *Chondria* (*Chondria armata* (Kützting) Okamura, *Chondria crassicaulis* Harvey, *Chondria dasyphylla*, *Chondria intertexta* Silva, *Chondria ryukyuensis* Yamada, *Chondria expansa*, *Chondria* spp.), *Laurencia* (*Laurencia intermedia* Yamada, *Laurencia undulata* Yamada, *Laurencia pinnata* Yamada, *Laurencia brongniartii* J. Agardh), *Pterosiphonia* (*Pterosiphonia pennata*, *Pterosiphonia fibrillosa* Okamura), *Symphyocladia* (*Symphyocladia marCHANTIODES* (Harvey in Hooker) Falkenberg, *Symphyocladia latiuscula* Yamada, *Symphyocladia linearis* (Okamura) Falkenberg), *Herposiphonia* (*Herposiphonia fissidentoides* (Holmes) Okamura, *Herposiphonia subdisticha* Okamura), *Amansia* (*Amansia glomerata* C. Agardh, *Amansia japonica* (Holmes) Okamura, *Amansia* spp.), *Enantiocladia* (*Enantiocladia okamura* Yamada), *Aneuria* (*Aneuria lorentzii* Weber-van Bosse), *Neurymenia* (*Neurymenia fraxinifolia* (Mertens ex Turner) J. Agardh), *Neorhodomela* (*Neorhodomela aculeata* (Perestenko) Masuda), *Odonthalia* (*Odonthalia corymbifera* (Gmelin) Greville), *Batrachospermum* (*Batrachospermum* spp., *Batrachospermum sirodotii* Skuja ex P. Reis, *Batrachospermum gallae* Sirodot var. *longipolum* Skuja), *Cyanidium* (*Cyanidium caldarium*), *Nemalionopsis* (*Nemalionopsis tortuosa* Yoneda et Yagi), *Polysiphonia* (*Polysiphonia* spp.), *Porphyridium* (*Porphyridium cruentum*), *Thorea* (*Thorea okadae* Yamada), etc.)

[0035] Charophyceae (*Chara*, *Lamprothamnium*, *Nitellopsis*, *Lychnothamnus*, *Nitella* (*Nitella flexilis* Agardh var. *flexilis*, *Nitella acuminata* Braun var. *capitulifera* Imahori), *Tolypella*, etc.), Chrysophyceae (*Ochromonas* (*Ochromonas vischeri*), etc.), etc.

[0036] Additionally, the following animal extracts may be used as ingredients: cock's comb extract; extracts of bovine or human placentas; porcine or bovine duodenal extracts or intestinal extracts or their degradation products; porcine or bovine spleen extracts or their degradation products; porcine or bovine brain extracts; water-soluble collagen; collagen derivatives such as acylated collagen; collagen hydrolysates; elastin; elastin hydrolysates; water-soluble derivatives of elastin; keratin and keratin degradation products or their derivatives; sericin and sericin degradation products or their derivatives; porcine or bovine blood plasma protein hydrolysates; porcine or bovine hemoglobin degradation products (hemin, hematin, heme, protoheme, hemoferum, etc.), bovine milk, casein and casein degradation products or their derivatives; dried skim milk and dried skim milk degradation products or their derivatives; lactoferrin and its degradation products; chicken egg extracts; fish meat degradation products, etc.

[0037] (14) Metabolites derived from microbial cultures: Yeast metabolites, yeast extract, *Bacillus natto* bacteria metabolites, *natto* extract, fermented rice extract, *Euglena* extract, lactic acid fermentation products, trehalose and their derivatives from raw milk or skim milk.

[0038] (15) α -hydroxyl acids: Glycolic acid, citric acid, malic acid, tartaric acid, lactic acid, etc.

[0039] (16) Inorganic dyes: anhydrous silicic acid, magnesium silicate, talc, kaolinite, bentonite, mica, titanium mica, bismuth oxychloride,

zirconium chloride, magnesium chloride, zinc chloride, titanium chloride, calcium carbonate, magnesium carbonate, yellow iron oxide, colcothar, black iron oxide, chromium oxide, chromium hydroxide, carbon black, calamine, etc.

[0040] (17) UV blockers / UV absorption promoters: Benzophenone derivatives (2-hydroxy-4-methoxy benzophenone, 2-hydroxy-4-methoxy benzophenone 5-sulfonic acid, sodium 2-hydroxy-4-methoxy benzophenone 5-sulfonate, dihydroxy-dimethoxy benzophenone, sodium dihydroxy-dimethoxy benzophenone sulfonate, 2,4-dihydroxy benzophenone, tetrahydroxy benzophenone, etc.), p-amino benzoin derivatives (para-amino benzoic acid, ethyl para-amino benzoate, glycerol para-amino benzoate, amyl para-dimethylamino benzoate, octyl para-dimethylamino benzoate, etc.), methoxycinnamic acid derivatives (ethyl para-methoxycinnamate, isopropyl para-methoxycinnamate, sodium para-methoxycinnamate, potassium para-methoxycinnamate, glycerol di-para-methoxycinnamate mono-2-ethylhexanoate, etc.), 2-hydroxybenzoic acid derivatives (octyl 2-hydroxybenzoate [octyl salicylate], phenyl salicylate, homomenthyl salicylate, dipropylene glycol salicylate, ethylene glycol monosalicylic acid ester, myristyl salicylate, methyl salicylate, etc.), anthranilic acid derivatives (methyl anthranilate, etc.), urocanic acid derivatives (urocanic acid, ethyl urocanate, etc.), coumarin derivatives, amino acid compounds, benzotriazole derivatives, triazole derivatives, imidazole derivatives, pyrimidine derivatives, dioxane derivatives, camphor derivatives, furan derivatives, pyrone derivatives, nucleic acid derivatives, allantoin derivatives, nicotine derivatives, vitamin B6 derivatives, umbelliferone, esculin, benzyl cinnamate, cinoxate, 4-methoxy-2-hydroxybenzophenone [oxybenzone], dioxybenzone, octabenzone, sulisobenzene, benzoaresorcinol, arbutin, guaiazulene, shikonin, baicalin, baicalein, berberine, Neo Heliopan, escarole, zinc oxide, talc, kaolinite, etc.)

[0041] (18) Whitening agents: p-amino benzoin derivatives, salicylic acid derivatives, anthranilic acid derivatives, coumarin derivatives, amino acid compounds, benzotriazole derivatives, tetrazole derivatives, imidazole derivatives, pyrimidine derivatives, dioxane derivatives, camphor derivatives, furan derivatives, pyrone derivatives, nucleic acid derivatives, allantoin derivatives, nicotine derivatives, vitamin C and its derivatives, vitamin E and its derivatives, oxybenzone, benzophenone, arbutin, guaiazulene, shikonin, baicalin, baicalein, berberine, placenta extract, etc.

[0042] (19) Tyrosinase-activity inhibitors: Vitamin C and its derivatives, hydroquinone and its derivatives (hydroquinone benzyl ether), kojic acid and its derivatives, vitamin E and its derivatives, N-acetyl tyrosine and its derivatives, glutathione, hydrogen peroxide, zinc peroxide, hydroquinone mono-benzyl ether, placenta extract, silk extract, plant extracts (*Morus alba*, *Angelica acutiloba*, *Sophora flavescens*, *Artemisia princeps*, *Lonicera japonica*, *Phellodendron amurense*, *Houttuynia*, *Pachyma hoelen*, *Coix lacryma-joli*, *Lamium album*, *Humulus lupulus*, *Crataegus cuneata*, *Tasmanian blue gum*, *Achillea millefolium*, *Althaea officinalis*, *cinnamon bark*, *Vitex rotundifolia*, *Morus bombycis*, *Isodon japonicus*, *Platycodon grandiflorum*, *Cuscuta chinensis* Lam., *Euphorbia lathyris*, *Belamcanda chinensis*, *Ephedra*, *Cnidii rhizome*, *Angelica pubescens tuber*, *Radix Bupleuri*, *Ledebouriella*, *glehnia root*, *Radix Scutellariae*, *tree peony bark*, *Paeonia albiflora*, *Pueraria hirsuta*, *Glycyrrhiza glabra*, *Galla Chinensis*, *Aloe barbadensis*,

cimicifuga rhizome, Carthamus tinctorius, green tea, red tea, Acacia catechu), etc.

[0043] (20) Melamine reducing / degrading agents: Phenylmercuric hexachlorophene, mercury (II) oxide, mercury (I) chloride, hydrogen peroxide, zinc peroxide, hydroquinone and its derivatives (hydroquinone benzyl ether), etc.

[0044] (21) Turnover-stimulating / cell-activation substances: Hydroquinone, lactic acid bacillus extract, placenta extract, Ganoderma lucidum extract, vitamin A, vitamin E, Allantoin, spleen extract, pleural extract, yeast extract, fermented milk extract, plant extracts (Aloe barbadensis, Scutellaria root, Equisetum arvense, Radix Gentianae, Arctium lappa, Lithospermum root, Daucus carota, Hamamelis virginiana, Humulus lupulus, Coicis semen, Lamium album, Cucumis sativus, Thymus vulgaris, Rosmarinus officinalis), etc.

[0045] (22) Astringents: Acidum succinicum, allantoin, zinc chloride, zinc sulfate, zinc oxide, calamine, zinc p-phenolsulfonate, potassium aluminum sulfate, Resorcinol (resorcin), iron (II) chloride, digallic acid (including catechin compounds), etc.

[0046] (23) Active oxygen scavenger / radical scavengers: SOD, catalase, glutathione peroxidase, etc.

[0047] (24) Antioxidants: Vitamin C and its salts, stearates (stearic acid esters), vitamin E and its derivatives, nordihydroguaiaretic acid, Butylated hydroxytoluene (BHT), Butylated hydroxyanisole (BHA), hydroxy triazole, para-hydroxyanisole, propyl gallate, sesamol, sesamol, gossypol, etc.

[0048] (25) Anti-lipid-peroxide formation inhibitors: β -carotene, plant extracts (Sesamum indicum cultured cells, Hydrangeae dulcis folium, Hypericum erectum, Hamamelis virginiana, Syzygium aromaticum, Melissa officinalis, Isodon japonicus, Betula alba, Salvia officinalis, Rosmarinus officinalis, Nandina domestica fruit, rose fruit, Ginkgo biloba, green tea), etc.

[0049] (26) Anti-inflammatory agents: Ichthammol (ammonium ichthysulfonate), indomethacin, kaolin, salicylic acid, sodium salicylate, methyl salicylate, acetylsalicylic acid, diphenhydramine chloride, d-camphor, dl-camphor, hydrocortisone, guaiazulene, chamazulene, chlorpheniramine maleate, glycyrrhizic acid and its salts, glycyrrhetic acid and its salts, Glycyrrhiza glabra extract, Radix Lithospermi extract, rose fruit extract, etc.

[0050] (27) Disinfectants, bactericidal agents and sterilizing agents: Acrinol, sulfur, calcium gluconate, chlorhexidine gluconate, sulfamine, mercurochrome, lactoferrin and its hydrolysis products, aqueous alkyl diamino ethylglycine chloride, triclosan, sodium hypochlorite, chloramine T, bleaching powder, iodine compounds, iodoform, Sorbic acid and its derivatives, salicylic acid, dehydroacetic acid, para-hydroxy benzoic acid esters, undecylenic acid, thiamine laurylsulfate, thiamine laurylnitrate, phenol, cresol, p-chlorophenol, p-chloro-m-xyleneol, p-chloro-m-cresol, thymol, phenethyl alcohol, o-phenylphenol, irgasan CH3565, halocarbon, hexachlorophene, chlorhexidine, ethanol, methanol, isopropyl alcohol, benzyl alcohol, propylene glycol,

phenoxyethanol, chlorobutanol, isopropylmethylphenol, nonionic surfactants (polyoxyethylene lauryl ether, polyoxyethylene nonylphenyl ether, and polyoxyethylene octylphenyl ether, etc.), amphoteric surfactants, anionic surfactants (sodium lauryl sulfate, and lauroylsarcosine potassium, etc.), cationic surfactants (cetyl trimethyl ammonium bromide, benzalkonium chloride, benzethonium chloride, methylosaniline chloride), formaldehyde, hexamine, brilliant green, malachite green, crystal violet, Germall, photosensitizer 101, photosensitizer 201, photosensitizer 401, N-long-chain acyl basic amino acid derivatives and acid addition salts thereof, zinc oxide, hinokitiol, *Radix Sophorae*, etc.

[0051] (28) Humectants: Glycerine, propylene glycol, 1,3-butylene glycol, hyaluronic acid and its salts, polyethylene glycol, chondroitin sulfuric acid and its salts, water-soluble chitin or chitosan derivatives, pyrrolidone carboxylic acid and its salts, sodium lactate, *Mazzaella japonica* extract, *Bacillus subtilis* (natto) metabolites, natto extract, etc.

[0052] (29) Elastase-activity inhibitors: Diisopropyl fluorophosphate, plant extracts (*Scutellaria baicalensis* root, *Hypericum erectum*, *Sophora flavescens*, *Morus alba*, *Cinnamomum cassia*, *Geranium thunbergii*, *Symphytum peregrinum*, *Salvia splendens*, *Sambucus nigra*, *Tilia miqueliana*, *Paeonia suffruticosa*), marine algae extracts, etc.

[0053] (30) Hair treatment substances: Selenium sulfide, alkyl isoquinolinium bromide, zinc pyrithione, biphenamine, thianthol, cantharis tincture, ginger tincture, capsicum tincture, quinine chloride, strong aqua ammonia, sodium bromide, potassium bromide, thioglycolic acid, etc.

[0054] (31) Anti-androgen agents: Follicular hormone (estrone, estradiol, ethynylestradiol), isoflavone, oxendolone, etc.

[0055] (32) Peripheral-vessel blood flow enhancers: Vitamin E and its derivatives, *Swertia japonica* extract, garlic extract, carrot extract, *Aloe arborescens* extract, *Gentiana amarella* extract, *Angelica acutiloba* extract, *Cepharanthine* extract, carpronium chloride, minoxidil, etc.

[0056] (33) Topical stimulants: Capsicum tincture, vanilamide nonilate, cantharis tincture, ginger tincture, mint oil, L-menthol, camphor, benzyl nicotinate, etc.

[0057] (34) Metabolism activating agents: Photosensitizer 301, hinokitiol, pantothenic acid and its derivatives, allantoin, placenta extract, biotin, glyceride pentadecanoate, etc.

[0058] (35) Anti-seborrheic agents: Pyridoxine and its derivatives, sulfur, vitamin B6, etc.

[0059] (36) Keratolytic agents: Resorcin, salicylic acid, lactic acid, etc.

[0060] (37) Oxidizing agents: hydrogen peroxide, sodium peroxide, ammonium peroxide, sodium perborate, urea peroxide, sodium percarbonate, sodium tripolyphosphate peroxide, sodium bromate, potassium bromate, sodium pyrophosphate peroxide, sodium orthophosphate peroxide, sodium

silicate to which hydrogen peroxide is added, sodium sulfate to which hydrogen peroxide is added, β -tyrosinase solution, mushroom extract, etc.

[0061] (38) Hair removing agents: Inorganic reducing agents (strontium sulfate, sodium sulfide, barium sulfide, calcium sulfide, etc.), thioglycolic acids and its salts (calcium thioglycolate, sodium thioglycolate, lithium thioglycolate, magnesium thioglycolate, strontium thioglycolate), etc.

[0062] (39) Hair swelling agents: Ethanolamine, urea, guanidine, etc.

[0063] (40) Dyes: 5-amino-orthocresol, 2-amino-4-nitrophenol, 2-amino-5-nitrophenol, 1-amino-4-methylaminoanthraquinone, 3,3'-iminodiphenol, 2,4-diaminophenoxyethanol hydrochloride, 2,4-diaminophenol hydrochloride, toluene-2,5-diamine hydrochloride, nitroparaphenylenediamine hydrochloride, para-phenylenediamine hydrochloride, N-phenylparaphenylenediamine hydrochloride, meta-phenylenediamine hydrochloride, ortho-aminophenol, N-phenylparaphenylenediamine acetate, 1,4-diaminoanthraquinone, 2,6-diaminopyridine, 1,5-dihydroxynaphthalene, toluene-2,5-diamine, toluene-3,4-diamine, nitroparaphenylenediamine, para-aminophenol, para-nitroorthophenylenediamine, para-phenylenediamine, para-methylaminophenol, picramic acid, sodium picramate, N,N'-bis(4-aminophenyl)-2,5-diamino-1,4-quinonediimine, 5-(2-hydroxyethylamino)-2-methylphenol, N-phenylparaphenylenediamine, meta-aminophenol, meta-phenylenediamine, 5-amino-orthocresol sulfate, 2-amino-5-nitrophenol sulfate, ortho-aminophenol sulfate, ortho-chloroparaphenylenediamine sulfate, 4,4'-diaminodiphenylamine sulfate, 2,4-diaminophenol sulfate, toluene-2,5-diamine sulfate, nitroparaphenylenediamine sulfate, para-aminophenol sulfate, para-nitroorthophenylenediamine sulfate, para-nitromethaphenylenediamine sulfate, para-phenylenediamine sulfate, para-methylaminophenol sulfate, meta-aminophenol sulfate, meta-phenylenediamine sulfate, catechol, diphenylamine, alpha-naphthol, hydroquinone, phloroglucine, sodium 2-hydroxy-5-nitro-2',4'-diaminoazobenzene-5'-sulfonate, hematein, etc.

[0064] (41) Fragrances: Musk, civet, castoreum, and ambergris, botanical fragrances such as anise essential oil, angelica essential oil, ylang ylang essential oil, iris essential oil, fennel essential oil, orange essential oil, cananga essential oil, caraway essential oil, cardamom essential oil, guaiacwood essential oil, cumin essential oil, Linderia essential oil, cinnamon essential oil, geranium essential oil, copaiba balsam essential oil, coriander essential oil, perilla essential oil, cedarwood essential oil, citronella essential oil, jasmine essential oil, palmarosa sofia essential oil, cedar essential oil, spearmint essential oil, Western mint essential oil, star anis essential oil, tuberose essential oil, clove essential oil, Neroli essential oil, wintergreen essential oil, tolu balsam essential oil, patchouli essential oil, rose essential oil, palmarosa essential oil, Chamaecyparis obtusa essential oil, Hiba essential oil, sandalwood essential oil, petitgrain essential oil, bay essential oil, vetivert essential oil, bergamot essential oil, Peru balsam essential oil, bois de rose essential oil, ho camphor essential oil, mandarin essential oil, eucalyptus essential oil, lime essential oil, lavender essential oil, linaloe essential oil, lemongrass essential oil, lemon essential oil,

rosemary essential oil, Japanese mint essential oil, etc. and other synthetic fragrances.

[0065] (42) Pigments and coloring agents: Red cabbage color, monascus color, Catechol tannin, madder color, annatto color, Sepia color, turmeric oleoresin color, imperial yellow (from the flowers of the *Sophora japonica*), krill color, Japanese persimmon color, caramel, gold, silver, *Gardenia jasminoides* color, corn color, onion color, tamarind color, spirulina color, cherry color, layer color, hibiscus color, grape juice color, grape skin color, marigold color, purple sweet potato color, *Dioscorea alata* color, lac color, and rutin, etc.

[0066] In addition to the aforementioned substances, the following materials may also be included in combinations to achieve additive or synergistic effects: hormones, metal ion sequestering agents, pH buffering agents, chelating agents, preservatives, algefacients, stabilizing agents, emulsifiers, animal or plant proteins and their degradation products, animal or plant polysaccharides and their degradation products, animal or plant glycoproteins and their degradation products, anti-inflammatory and anti-allergic agents, wound healing agents, lather boosters, bodying agents, mouth-care substances, deodorants, enzymes, etc.

[0067] The compositions of cosmetics, bath agents and cleansers in this invention can be prepared in various forms such as liquid, emulsion, paste, gel, powder, granule, pellet, stick, solid, etc.

[0068] The compositions of cosmetics are for use as skin lotion, milky lotion, cream, oil, ointment, pack, lipstick, lip rouge, foundation, eye-liner, blush, mascara, eye shadow, manicure, fingernail coating, fingernail coating remover, shaving lotion, shampoo, rinse, hair treatment, hair tonic, hair spray, hair cream, hair lotion, hair dressing, hair essence, permanent, hair dye, hand soap, body soap, tooth paste, mouth rinse, face wash, soaps, etc.

[0069] The compositions of bath agents are for use during bath by adding the products to bath water. The products can be produced in various forms such as liquid, powder, granule, solid, etc.

[0070] The compositions of cleansers are for daily use as kitchen detergent, bathroom cleanser, wash basin cleanser, toilet cleanser, glass cleaner, glasses/lens cleanser, cleaner for automobiles, cleaner for building materials, etc.

[0071] In addition, the compositions in this invention can also be used by soaking sanitary goods, wet tissue paper, paper towel, cotton, etc. with the products.

[0072] Excellent effects in product performance can be achieved by adjusting the dried extract content of moisture-retaining plant extracts in the compositions of cosmetics and cleansers of this invention to 0.001% - 5% by weight, or ideally 0.01% - 1% by weight. In addition, for the compositions of bath agents, the recommended concentration (for one time use) in bath water is 0.00001% - 0.01% by weight or 0.0005% - 0.005% by weight.

[0073] EMBODIMENTS OF THE INVENTION:

Embodiment: Sample preparation 1 of plant extracts: To 1 kg plant mass, add 30% ethanol (EtOH) aqueous solution (10 L), and incubate the steeped material at room temperature for 3 days. Additionally, gently stir the solution 2-3 times each day. Upon completion of the incubation, perform filtration to obtain the extract. Depending on needs, the crude extract may be concentrated or dried.

[0074] Embodiment: Sample preparation 2 of plant extracts: To 1 kg plant mass, add 30% 1,3-butylene glycol (BG) aqueous solution (10 L) or 30% propylene glycol (PG) aqueous solution (10 L), and incubate the steeped material at room temperature for 3 days. Additionally, gently stir the solution 2-3 times each day. Upon completion of the incubation, perform filtration to obtain the extract.

[0075] Embodiment: Sample preparation 3 of plant extracts: To 1 kg plant mass, add purified water (10 L), and incubate the steeped material at room temperature for 3 days. Additionally, gently stir the solution 2-3 times each day. Upon completion of the incubation, perform filtration to obtain the extract. Depending on needs, the crude extract may be concentrated or dried.

[0076] Safety Tests:

(1) Primary skin irritation test:

Prepare aqueous solutions of the plant extracts obtained in sample preparations 1-3 (5.0% fixed solid content concentration). Apply the extract samples to the skin of 1-5 Hartley-strain guinea pigs (approximately 320 g in body weight) whose back has been shaved. For measurement, 24 hours after the extract treatment, determine any presence of erythema and swellings as markers in the primary skin irritation test, using an appropriate rating system. The results are evaluated according to known standards on the levels of erythema and swellings in animals, which should confirm negative results.

[0077]

(1) Cumulative skin irritation test:

Prepare aqueous solutions of the plant extracts obtained in sample preparations 1-3 (5.0% fixed solid content concentration). Apply the extract samples (at a frequency of 1 time per day, 5 times per week, at a dose of 0.5 mL per animal) to the skin of 1-5 Hartley-strain female guinea pigs (approximately 320 g in body weight) whose abdomen has been shaved. The application of extract treatment should last 4 weeks, and re-shaving of the animals is done on the last day of treatment of each week. For measurement, one the next day after the last extract treatment of each week, determine the presence/extent of erythema and swellings as markers in the primary skin irritation test, using an appropriate rating system. The results are evaluated according to known standards on the levels of erythema and swellings in animals after 1-4 days of drug treatment, which should confirm negative results.

[0078] Embodiment: Moisture-retention capacity of plant extracts 1: In order to assess the moisture-retention capacity of plant extracts of this invention, test subjects are used to measure moisture content changes over time in the horny cell layer in terms of electric conductivity.

(Test extract solutions) Purified plant extracts (prepared at 0.01% solid content concentration);
(Detector) IMPEDANCE METER SKICON-200; manufactured by IBS Co. Ltd.;

(Test subjects) 20-year-old female, 22-year-old female, 24-year-old female;
 (Test environment) 24°C, 50% indoor humidity;
 (Method) One hour before the start of the tests, the test subjects are allowed into a constant-temperature room maintained as the test environment described above for acclimatization. The test extract solutions (1 mL) are applied to the flexor aspect of the fore-arm of the test subjects. The remaining moisture content is removed 60 seconds after the initial application. The electric conductivity over time of the horny cell layer is then determined.

[0079] Figures 1-3 illustrate the test results. It can be deduced that compared with aloe vera extract (a control for this test), for the same solid content concentration, the plant extracts prepared according to this invention have higher moisture-retention capacity and longer effect.

[0080] **Embodiment:** Moisture-retention capacity of plant extracts 2: In order to assess the moisture-retention capacity of plant extracts of this invention, test subjects are used to measure epidermal moisture loss over time.

(Test extract solutions) Purified plant extracts in 30% ethanol aqueous solutions (prepared at 0.01% solid content concentration);
 (Detector) TEWAMETER TM210; manufactured by COURAGE+KHAZAKA Electronic GmbH;

(Test subjects) 23-year-old male, 29-year-old female, 24-year-old female, 35-year-old female, 35-year-old male
 (Method) The test extract solutions (1 mL) are applied (3 times a day) to the flexor aspect of the left and right fore-arms of the test subjects. After the third-time application of the extract treatment, the test subjects are allowed into a constant-temperature room maintained as the test environment described above for acclimatization, which is followed by measurements of epidermal moisture loss over time. The measurements are taken at 2-second intervals over a period of 3 minutes. The TEWL values for the topical areas being tested are computed by averaging all corresponding measurement values. Further, measurements of the blank tests are obtained prior to the measurements for the test extract solutions, using the same experimental conditions.

[0081] Table 1 summarizes the results of average moisture content changes of the five test subjects. It can be deduced that the plant extracts prepared according to this invention have an excellent moisture-retaining effect with the ability of reducing epidermal moisture loss by evaporation.

(Table 1)

Test solutions	Amount of evaporation in the epidermis (g/m ² hr)
Blank	18.4
Purified water	14.3
Uña de gato	8.5
Hercampuri	8.2
Quinua	9.3
Sangre de grado	8.1
Cedrón	8.3

Chanca piedra	8.5
Pájaro bobo	8.0
Balsamina	9.0
Boldo	8.2
Matico	8.0
Manzanilla	7.9
Muña	8.4
Control: Aloe vera	10.3

[0082] **Embodiment:** Efficacy in improvement of rough skin: In order to assess the efficacy of plant extracts of this invention in the improvement of rough skin, a guinea pig model of rough skin has been developed to conduct application testing. In addition, the analytes are prepared at the same solid content concentrations and the solvents alone are used as controls in the tests.

(Method) To achieve formation of rough skin, apply sodium lauryl sulfate (0.2 g) in vaseline (3% by weight) for 3 consecutive days to the skin of Hartley-strain week-5 postnatal female guinea pigs (3 test animals per group) whose back has been shaved. The rough skin thus formed are topically divided into 4 quadrants, to which the analytes (1.0 mL) are applied 3 times a day. Three days after the application, the degree of severity of rough skin is evaluated based on observations using a standard scale of evaluative scores.

(Evaluative scores)	Almost no erythema or desquamation is observed	1 point
	Mild desquamation with no accompanying erythema	2 point
	Moderate desquamation with no accompanying erythema	3 point
	Desquamation accompanied by erythema	4 point
	Moderate erythema accompanied by desquamation	5 point
	Significant erythema accompanied by desquamation	6 point

[0083] The test results are as indicated in Table 2. It can be deduced that the plant extracts prepared according to this invention are effective in improvement of rough skin. Moreover, it is demonstrated that combinations of different plant extracts can produce a synergistic effect in the treatments.

(Table 2)

Group	Test solutions (solid content concentrations)	Total scores
1	Uña de geto extract in 30% 1,3-BG (0.01%)	7
	Uña de geto extract in 30% EtOH (0.01%)	8
	30% 1,3-BG solution	16
	30% EtOH solution	18
2	Quinoa extract in 30% PG (0.01%)	7
	Quinoa extract in 30% EtOH (0.01%)	8
	30% PG solution	17
	30% EtOH solution	18
3	Chanca piedra extract in purified water (0.01%)	10
	Chanca piedra extract in 30% 1,3-BG (0.01%)	9

	Purified water solution	18
	30% 1,3-BG solution	16
4	Boldo extract in purified water (0.01%)	10
	Boldo extract in 30% EtOH (0.01%)	11
	Purified water solution	17
	30% EtOH solution	18
5	Hercampuri extract in 30% PG (0.01%)	8
	Hercampuri extract in 30% 1,3-BG (0.01%)	8
	Sangre de grado extract in 30% EtOH (0.01%)	11
	Sangre de grado extract in purified water (0.01%)	10
6	Pájaro bobo extract in 30% EtOH (0.01%)	11
	Pájaro bobo extract in purified water (0.01%)	10
	Matico extract in purified water (0.01%)	10
	Matico extract in 30% PG (0.01%)	9
7	Cedrón extract in 30% EtOH (0.01%)	12
	Cedrón extract in 30% PG (0.01%)	10
	Balsamina extract in 30% 1,3-BG (0.01%)	9
	Balsamina extract in 30% PG (0.01%)	10
8	Manzanilla extract in 30% EtOH (0.01%)	11
	Manzanilla extract in 30% PG (0.01%)	10
	Muña extract in 30% 1,3-BG (0.01%)	8
	Muña extract in 30% PG (0.01%)	9
9	(Hercampuri + Cedrón) extract in 30% EtOH (0.01%)	8
	(Uña de gato + Muña) extract in 30% 1,3-BG (0.01%)	7
	(Sangre de grado + Quinua) extract in purified water (0.01%)	7
	(Balsamina + Chanca piedra) extract in 30% EtOH (0.01%)	9
10	(Boldo + Hercampuri) extract in 30% PG (0.01%)	7
	(Matico + Balsamina) extract in purified water (0.01%)	8
	(Cedrón + Pájaro bobo) extract in 30% 1,3-BG (0.01%)	9
	(Manzanilla + Quinua) extract in 30% PG (0.01%)	7

[0084] **Embodiment:** Preparation of compositions for agents of external application: Compositions for agents of external application are prepared according to this invention. Sample formulations are shown as follows, though possible formulations according to this invention are not exclusively restricted to these.

[0085] (1) Sample preparation of lotion:

	Weight %
1	Sorbit
2	1,3-butylene glycol
3	Polyethylene glycol 1000
4	Polyoxyethylene oleyl ether (25E.0)
5	Ethanol
6	Quinua in 20% EtOH extract (1.0% solid content)
7	Hercampuri extract in 30% 1,3-BG (1.2% solid content)
8	Manzanilla extract in purified water (1.2% solid content)
9	Preservatives
	Suitable amount

10	Purified water	Remainder of total percentage
----	----------------	-------------------------------

[0086] (2) Sample preparation of milky lotion:

		Weight %
1	Squalane	3
2	Vaseline	1
3	Stearyl alcohol	0.3
4	Sorbitan monostearate	1.5
5	Polyoxyethylene (20) sorbitan monostearate	3
6	1,3-butylene glycol	5
7	Uña de geto extract in 50% 1,3-BG (1.0% solid content)	0.5
8	Quinoa extract in purified water (1.0% solid content)	2
9	Purified water	Remainder of total percentage

[0087] (3) Sample preparation of cream:

		Weight %
1	Squalane	20
2	Yellow beeswax	5
3	Purified jojoba oil	5
4	Glycerol monostearate	2
5	Sorbitan monostearate	2
6	Polyoxyethylene (20) sorbitan monostearate	2
7	Glycerol	5
8	Uña de geto extract in 50% 1,3-BG (1.2% solid content)	1
9	Muña extract in purified water (1.0% solid content)	1
10	Purified water	Remainder of total percentage

[0088] (4) Sample preparation of body soap:

		Weight %
1	Potassium laurate	15
2	Potassium myristate	5
3	Propylene glycol	5
4	Sangre de grado extract in 20% PG (1.1% solid content)	2
5	Balsamina extract in purified water (1.4% solid content)	2
6	pH control agents	Suitable amount
7	Preservatives	Suitable amount
8	Purified water	Remainder of total percentage

[0089] (5) Sample preparation of shampoo:

		Weight %
1	Triethanolamine lauryl sulfate	5

2	Sodium polyoxyethylene lauryl sulfate	12
3	1,3-butylene glycol	4
4	Diethanolamide laurate	2
5	Edetate disodium	0,1
6	Cedrón extract in purified water (1.4% solid content)	1
7	Matico extract in 40% PG (1.2%)	2
8	Fragrances, preservatives	Suitable amount
9	Purified water	Remainder of total percentage

[0090] (6) Sample preparation of rinse:

		Weight %
1	Stearyl trimethyl ammonium chloride	2
2	Cetostearyl alcohol	2
3	Polyoxyethylene lanolin ether	3
4	Propylene glycol	5
5	Chanca piedra extract in purified water (1.0% solid content)	1
6	Boldo extract in 40% 1,3-BG (1.2% solid content)	2
7	pH control agents	Suitable amount
8	Preservatives	Suitable amount
9	Purified water	Remainder of total percentage

[0091] (7) Sample preparation of hair tonic:

		Weight %
1	Ethanol	50
2	Ethyl oleate	1
3	Polyoxyethylene (40) hydrogenated castor oil	2
4	Hercampuri extract in 20% EtOH (1.2% solid content)	2
5	Pájaro bobo extract in 30% EtOH (1.2% solid content)	1
6	Purified water	Remainder of total percentage

[0092] (8) Sample preparation of bath agent (type A):

		Weight %
1	Sodium hydrogencarbonate	56
2	Anhydrous sodium carbonate	30
3	Borax	2
4	Manzanilla extract powder from purified water	5
5	Muña extract powder from purified water	5
6	Plant extract powders (chamomile, Angelica acutiloba)	2
7	Purified water	Remainder of total percentage

[0093] (9) Sample preparation of bath agent (type B):

		Weight %
--	--	----------

1	Purified jojoba oil	5
2	Polyoxyethylene sorbitan monostearate	20
3	Glycerol monostearate	5
4	Adepsine oil	2
5	Diethanolamide laurate	3
6	Concentrated cedrón extract in 20% EtOH (15% solid content)	2
7	Concentrated Chanca piedra extract in purified water (15% solid content)	2
8	Plant extracts (Cnidii rhizome, Citrus unshiu peel; 1.0% solid content)	10
9	Purified water	Remainder of total percentage

[0094] (10) Sample preparation of facial wash:

		Weight %
1	Triethanolamine myristate	15
2	Lauryl dimethylamine oxide	3
3	Propylene glycol	5
4	Glycerol	5
5	Denatured ethanol	3
6	Balsamina extract in 20% EtOH (1.5% solid content)	2
7	Boldo extract in 20% 1,3-BG (1.2% solid content)	2
8	Distearyl ethylene glycol	3
9	Purified water	Remainder of total percentage

[0095] (11) Sample preparation of mouth rinse:

		Weight %
1	Ethanol	30
2	Glycerol	15
3	Polyoxyethylene hydrogenated castor oil	1
4	Benzosulfimide	0.1
5	Chlorhexidine	0.003
6	Pájaro bobo extract in 20% EtOH (1.2% solid content)	2
7	Matico extract in purified water (1.5% solid content)	2
8	Purified water	Remainder of total percentage

[0096] (12) Sample preparation of cooking-utensil cleanser:

		Weight %
1	Alkyl (C12) glycoside	15
2	Sodium polyoxyethylene (3) dodecyl ether	10
3	Sangre de grado extract in 20% EtOH (1.2% solid content)	3
4	Balsamina extract in 20% 1,3-BG (1.5% solid content)	3
5	Ethanol	5
6	Purified water	Remainder of

		total percentage
--	--	---------------------

[0097] Tests on the use of different agents of external application:
 (1) Outline of the test procedure: The milky lotion, body wash (type A), shampoo, rinse, hair tonic and cooking-utensil cleanser are prepared as in the embodiments. These products are collectively termed (a) and are evaluated among male and female panelists (total 10) who participated in the tests on the products' use. As a control, products (b) are prepared by excluding the plant extracts or extraction products of this invention from the formulations for agents of external application. Products (a) are used for one month after the start of the tests, followed by a switch to the use of the control products (b) for another one month in the subsequent test period. A questionnaire is then administered to collect responses on the use of products as specified by the following instructions for use.

[0098] (2) Instructions for use:

Milky lotion: Apply to face immediately after face washing during the day or immediately after bath during the evening.
 Dosage: 3 mL for each product, once per day.
 Body wash (type A): Add to bath water and take bath. Dosage: 30 g, once per day.
 Shampoo: Use when cleaning hair. Dosage: 10 mL, once per day.
 Hair tonic: Apply immediately after the use of shampoo. Dosage: 10 mL, once per day.
 Cooking-utensil cleanser: Any time.

[0099] (3) Questionnaire results: The evaluation results based on the questionnaire are shown in Table 3.

(Table 3)

Questionnaire on the Tests of Product Use (Numerical values = number of respondents)										
Questionnaire item	Milky lotion		Body wash (type A)		Shampoo / rinse		Hair tonic		Cooking-utensil cleanser	
(Select the product that is superior)	a	b	a	b	A	b	a	b	A	b
Moist feel (sense of moisture retention)	9	1	8	2	8	2	9	1	8	2
Sustainability of moist feel	10	0	9	1	9	1	9	1	8	2
Touch during use of product	6	4	6	4	6	4	6	4	8	2
Enrichment of suppleness (skin / hair)	9	1	8	2	8	2	9	1	7	3
Prevention / improvement of rough skin	10	0	9	1	-	-	-	-	9	1
Optional comments by respondents who have indicated that products (a) are superior: (Representative product)										

- The skin texture has improved, with better make-up attachment. (Milky lotion)
- The skin has acquired extra elasticity compared to previous periods. (Milky lotion)
- The sensations of lack of moisture after bath in the back, elbow, and knee are removed. (Body wash type A)
- The sensations of strain and itchiness in the back after bath are removed. (Body wash type A)
- The hair feels smooth and untangled after wash. (Shampoo / rinse)
- The hair is given an appropriate amount of moisture. Hair manageability is improved as a result of increased suppleness of the hair. (Hair tonic)
- The hair looks glossy with a rich shine. (Hair tonic)
- The condition of rough skin in the hands gradually improves. (Cooking-utensil cleanser)

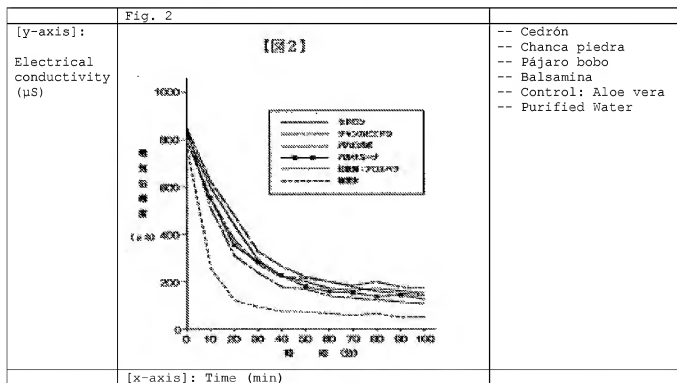
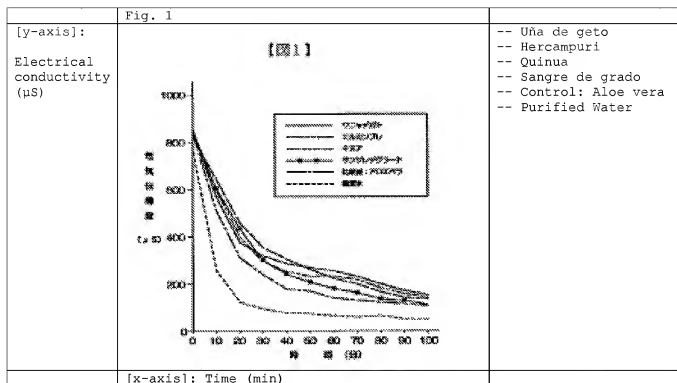
[0100] Advantages of the Invention: This invention is designed with the purpose of producing the followings: composition of cosmetics and bath agents that contain moisture-retaining plant extracts with sustained moisture-retention effects over extended periods, and possess properties effective for skin treatments that prevent, alleviate, or improve such conditions as dryness, rough skin, cracks, chaps, dandruff, pruritus and inflammatory diseases, and for hair treatments that relieve such conditions as dryness, dehydration, split ends, brittle hair, and loss of natural gloss; improved composition of cleansers that has low risks of causing skin problems and helps maintain skin health via the actions of moisture-retaining plant extracts.

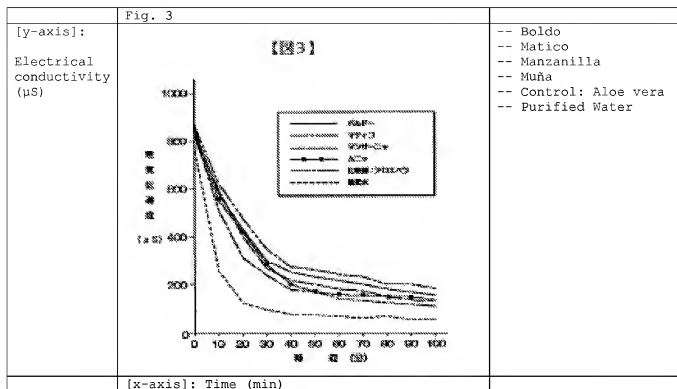
[Notes on Drawing Numerals]

Fig. 1: Changes of electrical conductivity over time at skin locations where the plant extracts uña de geto, hercampuri, quinua and sangre de grado have been applied. (Embodiment: Moisture-retention capacity of plant extracts 1)

Fig. 2: Changes of electrical conductivity over time at skin locations where the plant extracts cedrón, chanca piedra, pájaro bobo, and balsamina have been applied. (Embodiment: Moisture-retention capacity of plant extracts 1)

Fig. 3: Changes of electrical conductivity over time at skin locations where the plant extracts boldo, matico, manzanilla, and muña have been applied. (Embodiment: Moisture-retention capacity of plant extracts 1)





(Continued from the front page.)

F terms	4C083	AA082	AA111	AA112	AA122
(reference):		AB152	AB312	AB352	AC012
		AC022	AC072	AC102	AC122
		AC132	AC182	AC242	AC422
		AC432	AC442	AC532	AC562
		AC642	AC692	AC812	AC862
		AD042	AD512	CC01	CC04
		CC05	CC23	CC25	CC37
		CC39	CC41	DD23	DD31
		EE22			EE12